IMPERIAL IRWMP

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

# Stakeholder Sponsored Projects

Integrated Regional Water Management Plan

Prepared by GEI Consultants, Inc
For Imperial Valley Water Forum

Date: February 3, 2012





GEI Consultants

# Acknowledgements

This document was prepared by GEI Consultants, Inc., for the Imperial Water Forum as an interim work product prepared as part of the Imperial Integrated Regional Water Management Plan (Imperial IRWMP). Work was conducted pursuant to agreement between the Imperial Irrigation District (IID) and the California Department of Water Resources (CDWR; Agreement 4600009343). State funding was provided by CDWR under the Integrated Regional Water Management (IRWM) Grant Program with bond monies approved by the voters of California under Proposition 84 (The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coast Protection Bond Act of 2006, Chapter 2 (Public Resource Code section 75001 et seq.). Thanks go out to the voters of California and to the dedicated staff at CDWR that supported the projects. Local funds were provided by IID Board of Directors. On behalf of the Imperial Water Forum, IID prepared the grant applications, provided project management support, and acted as contract administrator and fiscal agent. Ormat, Inc. is acknowledged for providing funding pursuant to agreement between IID and Ormat.

Special thanks are extended to all of the individual members and agencies that participated in the Imperial Water Forum, Program Management Team and work groups. Without their dedication and commitment of time and effort, the Water Forum would not have been able to accomplish this work.

The work product presented herein is a deliverable prepared for Task 12, Preliminary Project Evaluation, and Task 14, Review and Evaluate Results of a Final Call for Stakeholder Sponsored Projects.

**Water Forum and RWMG Members**

Imperial Irrigation District
County of Imperial
Imperial County Farm Bureau
Imperial Valley Vegetable Growers Association
IID Water Conservation Advisory Board
City of Brawley
City of Calexico
City of El Centro
City of Holtville
City of Imperial
City of Westmoreland
Heber Public Utility District
Niland Sanitary District
Geothermal Energy Stakeholder Group
Comité Cívico Del Valle Inc in Brawley
Institute for Socioeconomic Justice
El Centro Chamber of Commerce & Visitors Bureau
Brawley Chamber of Commerce
Imperial Valley Economic Development Corporation
New River Improvement Project
Sierra Club, California Nevada Regional Conservation Committee
USFWS Sonny Bono Salton Sea National Wildlife Refuge

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# Imperial IRWMP

## General Project Information

### ***HPUD WWTP Upgrade to Tertiary Treatment***

*Project ID* *1*

Sponsoring Agency Heber Public Utility District

Participating Agencies Heber Public Utility District

### *Project Contact Information*

Contact: John A. Jordan Title: General Manager

Email: jjordan@heber.ca.gov Phone No: 760-482-2440

Mailing Address: 1078 Dogwood Road, Suite 103, Heber, CA 92249

### *Project Location* NW 1/4, NE 1/4 of Section 28, T16S, R14E, SB B&M Imperial County, CA

### *Project Goals and Type*

Goals Water Supply

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Reuses water that would otherwise flow into a drain ditch.

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation*

Are sponsors sought? Yes

### *Project Summary*

Upgrade the Wastewater Treatment Plant's secondary system and add the tertiary treatment standards needed to comply with CCR Title 22 Section 60306 (a) as amended.

### *Project Purpose and Need*

The project is needed to generate new water for industrial demand in Imperial County, specifically to support new geothermal energy development. This 1.2 MGD will reduce demand on Colorado River Water that is supplied by the Imperial Irrigation District which is currently the only source of water for industrial projects in Imperial County. If the project is not implemented there is the possibility that in overrun years the agriculture community will need to fallow land in order for the IID to meet the industrial supply which has a higher priority.

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 1 **Title** *HPUD WWTP Upgrade to Tertiary Treatment*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* The HPUD could upgrade to a 1.2 MGD from their current capacity of 0.8 MGD.

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Ecosystem Restoration/Management F** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* Project would allow for future expansion of geothermal plants, and other commercial & industrial projects.

**Other Benefits:**

*Explanation:* The purpose of the NPDES program under EPA is to eliminate discharge. This project would meet that purpose and remove the need for a fresh water supply, the Colorado River, as the water supply in an industrial cooling tower.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 1 **Title** *HPUD WWTP Upgrade to Tertiary Treatment*

***Project Schedule Information***

**Status:** The project has undergone preliminary review by The Holt Group of El Centro, CA

**Commencement:** 1 - 3 Years

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** HPUD is located in a primarily "low income" area and has no revenue to complete the project on a sole basis.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $12,500,000 |
| **Total of planned local funding (cost match):** | $1,354,430 |
| **Total of other non-state or federal funding:** | $6,000,000 |
| **Total project costs currently unfunded:** | $6,500,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *1* **Title** *HPUD WWTP Upgrade to Tertiary Treatment*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | Preliminary plans documented through HPUD/The Holt Group. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*HPUD WWTP Upgrade to Tertiary Treatment*

*Project ID* 1

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | Yes |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Keystone Desalination with IID Drainwater/Alamo River Source (50 KAFY)***

*Project ID* 2

Sponsoring Agency Imperial Irrigation District

Participating Agencies

### *Project Contact Information*

Contact: Anisa Divine Title: Project Manager

Email: ajdivine@iid.com Phone No: 7603399036

Mailing Address: 333 E. Barioni Boulevard, Imperial, CA, 92251

### *Project Location* Keystone Specific Plan Area

### *Project Goals and Type*

Goals Water Supply

Type Plan Development

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | Plan Development |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* The proposed projects would help to manage and expand the Imperial Region water supply portfolio and meet the water supply goal and related water supply objectives (wso) by: helping to meet future demands while avoiding impacts to existing users (wso 1); providing a firm, verifiable, and sustainable supply (wso 2); protect surface water rights and implement water conservation measures that demonstrate reasonable beneficial use of the available supplies (wso 4b); and be part of an integrated strategy that diversifies the regional water supply portfolio (wso 5).

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* Imperial County General Plan - Geothermal/Alternative Energy and Transmission Element (Geothermal/Alternative Element; October 2006) was implemented to guide land use decisions and approvals. Imperial County supports and encourages the full, orderly, and efficient development of Geothermal/Alternative Energy Resources, while at the same time preserving and enhancing possible agricultural, biological, human, and recreational resources (Goal 1). The Geothermal/Alternative Energy Element identifies a need for geothermal water use of 180,000 ac-ft of water per year, stating that geothermal development will have first priority for use of "saved" and/or excess water over other uses which the County has jurisdiction (Objective 3.2). In addition, the General Plan seeks to minimize impacts to agricultural lands and biological resources (Goal 2) by carefully analyzing the potential impacts on agricultural and biological resources from each project (Objective 2.4). Geothermal/Alternative Energy Operations are required to efficiently utilize water (Goal 3) in order to maintain at least the present level of agricultural production while encouraging efficient water use (Objective 3.1).

Are sponsors sought? Yes

### *Project Summary*

Develop 50,000 AFY desalination plant to treat brackish surface water from the Alamo River or from IID drains. The source water comes from the Alamo River or is collected from a drain near the terminus of the Rose, Holtville, and Central drains (60,000 AFY at 75% plant efficiency). The produced water would be conveyed to IID conveyance facilities for distribution to agricultural users as a substitute for using Colorado River water. Colorado River water would then be provided to proposed projects that represent a new water use. This substitution of produced water for Colorado River water reduces project costs for pipelines or other conveyance that would otherwise be needed to deliver the water. Brine disposal would be through injection of the water to the deeper, highly saline formations beneath the plant using five new injection wells. If geothermal plants were to be collocated in the future, there could be an opportunity to partner on wells that would inject the brine stream from the Desalination Plant. The project could be built in phases and expanded as renewable energy industry demands increased.

### *Project Purpose and Need*

The purpose of the Keystone Desalination Project is to provide 50,000 acre-feet per year (AFY) of new supply and to expand the Imperial Region's water supply portfolio, so it can be apportioned to new users that would otherwise rely on imported Colorado River water. The Imperial Region's Colorado River water supply is fully apportioned to existing uses (agricultural, municipal, industrial, and environmental). As such, new demands that rely on Colorado River water could have a potential impact on current users. Projects to expand the utility of the water supply are needed to avoid conflicts between historical water uses and/or between the types of use. For new projects, State law requires proof of a long-term, sustainable water supply that is available without impacting current users, available supplies, or the environment. The objectives are to provide a firm, reliable supply to new users that can be apportioned by IID; and to support the land use agencies to adopt affirmative findings and to verify water is available when approving new projects consistent with adopted land use plans.

### *Additional Information*

For purposes of comparison, other 50 KAFY Keystone Project variants were defined in the Draft IID Plan. Keystone Desalination Alternative 2, which would rely on pumping brackish groundwater and recharging groundwater in the East Mesa with Colorado River underruns, was configured to avoid potential impacts to IID drains, the Alamo River and the Salton Sea ($590/AF) and to reduce potential permitting, environmental compliance, and mitigation costs; Keystone Desalination Alternative 3 included the elements of Alternative 2 and added a municipal, commercial, and industrial distribution system ($625/AF) to expand the use of the produced water. Keystone Desalination Alternative 6 included a plant to produce 25 KAFY from pumping and treatment of brackish groundwater and demonstrate the cost effectiveness associated with the economies of scale for the larger plant ($654/AF). This alternative has raised concerns about subsidence within in the region's agricultural footprint. Use of evaporation ponds for brine disposal was also investigated and pushed the costs to $1,270/AF (Desalination 5).

# Imperial IRWMP

## *Project Benefits*

ID 2 **Title** *Keystone Desalination with IID Drainwater/Alamo River Source (50 KAFY)*

**Water Supply Benefits** Yes

*Explanation:* Planned yield is 50,000 AFY for use mainly by renewable energy projects in lieu of imported Colorado River water. Estimated unit cost for water is $477/AF.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* The project would enable secondary use of imported Colorado River water and, thus, expand the supply available to meet new demands mainly for use by the renewable energy industry. Use of desalinated water for cooling purposes at renewable energy facilities represents a best management practice consistent with state and federal requirements and standards for renewable energy facilities operating in the desert environment of the Imperial Region (See Renewable Energy Action Team (REAT) report to the California Energy Commission, December 2010).

**Ecosystem Restoration/Management B** No

*Explanation:*

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** Yes

*Explanation:* Even though desalination will require energy, the water would be provided primarily for renewable energy projects (solar thermal, geothermal), which can provide power and meet state goals for development of renewable energy and reduction in greenhouse gas emissions.

**Economic Development Benefits** Yes

*Explanation:* The project would also support the Region's economic development and disadvantaged communities by providing a water supply to support planned growth of the communities and renewable energy industry (Technical Memorandum - Estimated Economic Impacts to Imperial to County from Conversion of Agricultural Water to Municipal and Industrial Uses. ARECon, Sept 2009.

**Other Benefits:**

*Explanation:* This project could offset the possible overdraft or the development of well water quality issues in the Coachella groundwater basin, if those issue were to arise.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 2 **Title** *Keystone Desalination with IID Drainwater/Alamo River Source (50 KAFY)*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** 3 - 6 Years

**Completion:** > 6 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $147,440,000 |
| **Total of planned local funding (cost match):** | $147,440,000 |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $147,440,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *2* **Title** *Keystone Desalination with IID Drainwater/Alamo River Source (50 KAFY)*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | Reconnaissance level projects design and preliminary cost information was included in the Draft IID Plan. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# Imperial IRWMP

## *State RMS and Preferences*

*Keystone Desalination with IID Drainwater/Alamo River Source (50 KAFY)*

*Project ID* 2

### *DWR Regional Management Strategies*

#### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | Yes |
| Recycled Municipal Water | No |
| Conveyance Improvement | Yes |
| Small Local Storage | No |

#### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | Yes |

#### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | Yes |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

#### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | Yes |

#### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

### *State Program Preferences*

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

### *Statewide Priorities Addressed*

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## General Project Information

### ***New River Bioremediation and Wildlife Habitat Restoration and Process Evaluation Project***

*Project ID* 6

Sponsoring Agency: San Diego State University Research Foundation

Participating Agencies:

### *Project Contact Information*


Contact: John Crockett  Title: Director, Research Project Development

Email: jcrockett@foundation.sdsu.edu  Phone No: 619-594-3176

Mailing Address: 5250 Campanile Drive, San Diego, CA 92182


### *Project Location*

Calipatria, CA (or other suitable location along the drains of New and/or Alamo Rivers)

### *Project Goals and Type*

Goals: Water Quality

Type: Construction

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* The project will clean the New River of pollutants from both Mexicali and US agricultural, industrial, & sewage drainage. It will also restore valuable wildlife habitat and enhance the educational & recreational elements of water conservation & reuse.

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation*

Are sponsors sought? Yes

### *Project Summary*


The Imperial Valley offers a unique opportunity for the development of the algae industry, both for bioremediation of environmental pollution (nutrients from agricultural and municipal drainage) and for renewable energy production (electricity, biogas, and biofuels). Additionally, several high-value co-products come from algae, such as fertilizer, animal feeds, nutraceuticals, renewable chemicals, industrial enzymes and bioplastics. We propose to establish and evaluate an algae-based wastewater treatment facility in the Calipatria area to treat environmental pollutants from the New River. We would construct high-rate algae production ponds to assimilate nutrients and adsorb heavy metals (selenium) to supply 'clean' water to downstream constructed wetlands developed for wildlife habitat restoration. This project meets several of the goals and objectives of the Imperial IRWMP, including water supply, water quality, and environmental enhancement.


### *Project Purpose and Need*

The goal of this project is to evaluate processes that improve the water quality of the New and/or Alamo

Rivers while establishing an industry that would bring significant economic development (local jobs and taxable revenue) to the region. Algae rapidly assimilate nutrients from wastewater streams powered by the sun through photosynthesis, allowing nutrient rich water to be cleaned and the low-nutrient water returned to the environment. By removing waste nutrients from the two major tributaries entering the Salton Sea, eutrophication conditions will be significantly reduced, spikes and crashes of algae populations managed, and fish die-off and foul odor problems abated. In addition, since algae adsorb heavy metals (selenium) and other pollutants, the clean water will improve the food web in constructed wetlands for bird populations and help to restore valuable natural habitat for fish, birds, and other wildlife. This project is "shovel ready" and can be funded by grants from Prop. 84, SB 1079, and may be eligible for matching Federal grants from the WRDA (Water Resources Development Act), NOAA Office of Habitat Conservation, and from many other governmental agencies.

### *Additional Information*

The proposed project meets the Goals and Objectives of Imperial IRWMP. The CEP process can utilize waste water (from farms or municipal waste) to reclaim wastewater to develop valuable wildlife habitat (for domestic and migratory birds), and can produce valuable products, including animal feeds, fertilizer, nutraceuticals, renewable chemicals, and bioenergy (both renewable biodiesel and renewable energy from biomethane as a fuel or to generate 'green' electricity). Algae is the most efficient plant on the earth at converting solar energy into biomass. They can utilize non-potable water and non-arable lands, and can even grow in brackish or saline waters. They can digest waste pollutants as nutrients (recycle energy) and scrub carbon dioxide from the atmosphere, thereby reducing pollution and greenhouse gas emissions. This project can be integrated into other DWR environmental projects (Species Conservation Habitat) and/or can serve multi-purposes in recycling wastewater while developing mitigation banking wildlife habitat.

# Imperial IRWMP

## *Project Benefits*

ID 6 **Title** *New River Bioremediation and Wildlife Habitat Restoration and Process Evaluation Project*

**Water Supply Benefits** Yes

*Explanation:* We believe algae can convert non-potable waste water into high-quality clean water for use in constructed wetlands to eliminate the concerns about bioaccumulation of selenium and its well-know detrimental effects on birds and other wildlife.

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* Shallow depth algae culture ponds could be constructed on the playas as the Salton Sea reseeds in the future, thereby potentially 'capping' the fine sediments that can lead contribute nano-particles of dust to the air and contribute to human respiratory disease.

**Demand Management Benefits** Yes

*Explanation:* The 'clean' drain water could be used to supply wetlands, but also could be used as industrial cooling or reinjection water. This project also could fulfill some of the obligations of the IID and other water agencies to mitigate for water transfers under the QSA.

**Ecosystem Restoration/Management I** Yes

*Explanation:* In lieu of using Colorado River water, algae may be used to treat and recycled drain water, to provide significantly cleaner water (lower in organics and toxic selenium) for use in constructed wetlands that would provide valuable wildlife habitat.

**Public Access Benefits:** Yes

*Explanation:* The New River water quality would be improved and if used in constructed wetlands, these facilities could include nature trails and bird observation areas for the public to enjoy.

**Power Cost Savings or Production Benefits** Yes

*Explanation:* With sufficient quantities of algae biomass, a sustainable and renewable supply of methane (biogas) could be produced by using an anaerobic digester (along with cattle manure and other agricultural waste). The biogas can fuel an electric generator or be compressed into CNG or pipeline gas. Furthermore, in stark contrast to typical anaerobic digestion strategies, our approach would use all by-product CO2 gas to grow more algae, an emission-less digester technology.

**Economic Development Benefits** Yes

*Explanation:* The facility will enhance the environmental and provide economic development, including a diverse spectrum of jobs (technical, general labor, etc.) in the Imperial Valley. Additional activities include education, workforce training, etc.

**Other Benefits:**

*Explanation:* To provide selenium free water to constructed wetlands to protect and enhance resident and migratory bird populations, some of which are threatened or endangered species.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 6 **Title** *New River Bioremediation and Wildlife Habitat Restoration and Process Evaluation Project*

***Project Schedule Information***

**Status:** Preliminary Design

**Commencement:** < 1 Year

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:** We need funds to finalize the optimal design for the selenium removal system, to include a pre-treatment step followed by an algae nutrient removal zone and associated algae harvesting system.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $600,000 |
| **Total of planned local funding (cost match):** | $50,000 |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $550,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *6* **Title** *New River Bioremediation and Wildlife Habitat Restoration and Process Evaluation Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | Final Report to the Salton Sea Authority on the Controlled Eutrophication Process to remove nutrients from the Whitewater River. May 2008.A presentation at the Imperial Valley Renewable Energy Conference on the use of algae lipids for the production of biodiesel. May 2009.A presentation at the DOC-NOAA Water and Energy Conservation Seminar on the potential for developing an algae biofuels industry in the Imperial Valley. Sept. 2009.A presentation at the Salton Sea Stakeholders Symposium on the use of algae for wastewater treatment and for the production of biofuels and other high-valued products. May 2010. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | Environmental permits may be required (CEQA). |
| Does the project have a plan and schedule to complete the environmental review? | Yes |
| *Explanation* | Tentatively - CEQA review may be expedited for environmental enhancement projects. |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | Land Use, construction, CEQA, RWQCB - NPDES, etc. |
| Is there a plan and schedule to complete permitting process? | Yes |
| *Explanation* | Tentative. |

# Imperial IRWMP

## *State RMS and Preferences*

*New River Bioremediation and Wildlife Habitat Restoration and Process Evaluation Project*

*Project ID* 6

### *DWR Regional Management Strategies*

#### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | Yes |
| Desalination: | No |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | No |
| Small Local Storage | No |

#### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | Yes |
| Match Quality to Use | No |
| Pollution Prevention | Yes |
| Salinity Management | No |

#### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | Yes |
| Ag Lands Stewardship | Yes |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | Yes |
| Water Recrecation | Yes |
| Water Exchanges | Yes |

#### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | Yes |

#### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

### *State Program Preferences*

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

### *Statewide Priorities Addressed*

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***East Brawley 25 KAFY Desalination with Well Field and Groundwater Recharge (Desal 12)***

*Project ID* 7

Sponsoring Agency Imperial Irrigation District

Participating Agencies

### *Project Contact Information*


Contact: Anisa Divine Title: Project Manager

Email: ajdivine@iid.com Phone No: 7603399036

Mailing Address: 333 E. Barioni Boulevard, Imperial, CA, 92251


### *Project Location* East Brawley Geothermal Resources Area

### *Project Goals and Type*

Goals Water Supply

Type Plan Development

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* The groundwater storage project would help to manage and expand the Imperial Region water supply portfolio and meet the water supply goal and related water supply objectives (wso) by: helping to meet future demands while avoiding impacts to existing users (wso 1); providing a firm, verifiable, and sustainable supply (wso 2); and be part of an integrated strategy that diversifies the regional water supply portfolio (wso 5). It would also support meet the water quality goal to protect water quality for beneficial uses consistent with regional community interests and the RWQCB Basin Plan through cooperation with stakeholders, local and state agencies; and the related water quality objective (wqo) to preserve and, where and when technology allows, improve quality of groundwater resources in Imperial Region (wqo 5).

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* Imperial County General Plan - Geothermal/Alternative Energy and Transmission Element (Geothermal/Alternative Element; October 2006) was implemented to guide land use decisions and approvals. Imperial County supports and encourages the full, orderly, and efficient development of Geothermal/Alternative Energy Resources, while at the same time preserving and enhancing possible agricultural, biological, human, and recreational resources (Goal 1). The Geothermal/Alternative Energy Element identifies a need for geothermal water use of 180,000 ac-ft of water per year, stating that geothermal development will have first priority for use of "saved" and/or excess water over other uses which the County has jurisdiction (Objective 3.2). In addition, the General Plan seeks to minimize impacts to agricultural lands and biological resources (Goal 2) by carefully analyzing the potential impacts on agricultural and biological resources from each project (Objective 2.4). Geothermal/Alternative Energy Operations are required to efficiently utilize water (Goal 3) in order to maintain at least the present level of agricultural production while encouraging efficient water use (Objective 3.1).

Are sponsors sought? Yes

## *Project Summary*

The project includes 25,000 AFY desalination plant located in the East Brawley KGRA using brackish groundwater as the water source, and including groundwater recharge in the old Coachella Canal. The exact location for the plant has not been determined. Source water would be from a well field located in the East Brawley KGRA consisting of 10 wells located in existing easements and rights of way; drilled to an average depth of 900 feet producing 2,000 gpm for a total production capacity of about 21,000 gpm; connected by pipelines to the desalination plant. Total dissolved solids concentration of 1,900 mg/L is assumed. Water temperature from this well configuration is anticipated to be about 170 degrees Fahrenheit and would likely necessitate cooling the water prior to treatment to protect membranes and maintain plant efficiency. Brine disposal would be through injection of the water to the deeper, highly saline formations beneath the plant using three new injection wells. Produced water would be conveyed to IID facilities for distribution to agricultural uses as a substitute for using Colorado River water. Colorado River water would then be provided to the proposed renewable energy and other projects that represent a new water use. This substitution of produced water for Colorado River water reduces projects costs for pipelines or other conveyance facilities that would otherwise be needed to deliver the water. If geothermal plants were to be collocated in the future, there could be an opportunity to partner on wells that would recover the hot water and inject the brine stream from the Desalination Plant.

## *Project Purpose and Need*

The purpose of the Brawley Desalination Project is to provide 25,000 acre-feet per year (AFY) of new supply and to expand the Imperial Regions water supply portfolio that can be apportioned to new users that would otherwise rely on imported Colorado River water. The Imperial Region Colorado River water supply is fully apportioned to existing uses (agricultural, municipal, industrial and environmental). As such, new demands that would rely on Colorado River water (the only source of water for the region) could have a potential impact on current users. Projects to expand the water supply are needed to avoid conflicts between historical water uses or between the types of use. For new projects, State law also requires proof of a long-term, sustainable water supply that is available without impacting current users, available supplies, or the environment. The objective is to provide a firm, reliable supply to new users that can be apportioned by IID and to support the land use agencies to, adopt affirmative findings and verify water is available when approving new projects consistent with adopted land use plans.

## *Additional Information*

Other East Brawley desalination projects alternatives were configured for purposes of comparison. A 25 KAFY East Brawley Desalination facility was configured to include municipal, commercial, and industrial distribution pipelines (Desalination 9), which could serve disadvantaged communities with municipal drinking water. This would increase project costs to $659/AF. A 25 KAFY East Mesa Desalination facility with Groundwater Wells and Recharge was configured (Desalination 12) to evaluate collocating with geothermal plants in this area. This would involve use of more federal lands, brine injection at geothermal wells, use of water directly at geothermal facilities, and is an alternative that could be further developed since costs were within the range considered reasonable ($513/AF).

# Imperial IRWMP

## *Project Benefits*

ID 7 **Title** *East Brawley 25 KAFY Desalination with Well Field and Groundwater Recharge (Desal 12)*

**Water Supply Benefits** Yes

*Explanation:* Planned 25,000 AFY yield for use mainly by renewable energy projects in lieu of imported Colorado River water. Estimated unit costs for water is $480/AF.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* The projects would make secondary use of imported Colorado River water and expand the supply available to meet new demands. Use of desalinated water for cooling purposes at renewable energy facilities represents best management practice consistent with state and federal requirements and standards for this type of facility operating in the desert environment of the Imperial Region (See Renewable Energy Action Team (REAT) report to the California Energy Commission, December 2010).

**Ecosystem Restoration/Management I** No

*Explanation:*

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** Yes

*Explanation:* Even though desalination will require energy, the water would be provided primarily for renewable energy projects (solar thermal, geothermal), which can provide power and meet state goals for development of renewable energy and reduction in greenhouse gas emissions.

**Economic Development Benefits** Yes

*Explanation:* The project would also support the Region's economic development and disadvantaged communities by providing a water supply to support planned growth of the communities and renewable energy industry (Technical Memorandum - Estimated Economic Impacts to Imperial to County from Conversion of Agricultural Water to Municipal and Industrial Uses. ARECon, Sept 2009.)

**Other Benefits:**

*Explanation:* The project would expand the region's current water supply and protect agricultural land and water use, while supporting economic development consistent with local land use plans, and provide regional economic benefits in terms of jobs during construction and operation both for the proposed desalination plant and for renewable energy and other facilities that would be reliant on the new supply. The project could help to reduce regional and interregional competition for available supplies by expanding the local supply in the Imperial Region.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 7 **Title** *East Brawley 25 KAFY Desalination with Well Field and Groundwater Recharge (Desal 12)*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** 3 - 6 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:** Funding would be needed for feasibility study, preliminary and final design, environmental review and permitting, and construction.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $101,000,000 |
| **Total of planned local funding (cost match):** | $101,000,000 |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $101,000,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *7* **Title** *East Brawley 25 KAFY Desalination with Well Field and Groundwater Recharge (Desal 12)*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | Reconnaissance level project design and preliminary costing was completed as part of the IID Draft Plan. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*East Brawley 25 KAFY Desalination with Well Field and Groundwater Recharge (Desal 12)*

*Project ID* 7

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | Yes |
| Desalination: | Yes |
| Recycled Municipal Water | No |
| Conveyance Improvement | Yes |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | Yes |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | Yes |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | Yes |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## General Project Information

### City of Brawley Raw Water Storage Project

*Project ID* 8

Sponsoring Agency City of Brawley

Participating Agencies City of Brawley

### Project Contact Information

Contact: Yazmin Arellano Title: Public Works Director

Email: yarellano@brawley-ca.gov Phone No: 760-344-5800

Mailing Address: 180 South Western Ave., Brawley, CA 92227

### Project Location

Brawley CA, 92227. Imperial County

### Project Goals and Type

Goals Water Supply

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Supply Objective 1: Meet IID raw water capacity requirements.

### Other Project Information

Is the Project Consistent with existing plans? Yes

*Explanation* City of Brawley Capital Improvement Program

Are sponsors sought? No

### Project Summary

The City of Brawley is requesting funding for a Raw Water Reservoir improvement improvement project. The project will consist of the addition of a 30 million gallon raw water reservoir at the water treatment facility. With additional improvements on the existing reservoirs. The added capacity will enable the city to endure maintenance outages of 7 day durations. This added capacity is required by the raw water provider Imperial Irrigation District.The modifications will enhance the water operations at the treatment facility in reducing turbidity and clarifying the raw water, improving the water quality, reduce chemical costs and sludge handling operations, limit leakage.

### Project Purpose and Need

The project is needed to improve raw water capacity, water quality, limit water loss

### Additional Information

# Imperial IRWMP

## *Project Benefits*

ID 8 **Title** *City of Brawley Raw Water Storage Project*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* An estimated averaged of 0.100 mgd will be saved from the WTP. This water saving will reduce water demands from the Colorado River water system by 36.5 million gallons / year.

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Ecosystem Restoration/Management I** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | No |

*Explanation:*

**Other Benefits:**

*Explanation:* This project would improve water quality and operational controls, reduce seepage and evaporation.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 8 **Title** *City of Brawley Raw Water Storage Project*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** 1 - 3 Years

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** Need funding for design and construction.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $4,000,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $4,000,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *8* **Title** *City of Brawley Raw Water Storage Project*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*City of Brawley Raw Water Storage Project*

*Project ID* 8

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | Yes |
| Small Local Storage | Yes |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | Yes |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***City of Brawley Reclaim Water Project***

*Project ID* 9

Sponsoring Agency City of Brawley

Participating Agencies City of Brawley

### *Project Contact Information*

Contact: Yazmin Arellano Title: Public Works Director

Email: yarellano@brawley-ca.gov Phone No: 760-344-5800

Mailing Address: 180 South Western Ave., Brawley, CA 92227

### *Project Location* 5015 Best Road, Brawley, CA, 92227. Imperial County

### *Project Goals and Type*

Goals Water Supply

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | Yes |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Supply Objective 2: This project will provide the City of Brawley to supply reclaimed water to commercial users.

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation*

Are sponsors sought? Yes

### *Project Summary*

Upgrading the 5.9 MGD Wastewater Treatment's technology from advanced secondary to reclaimed water standards. The process will consist of flow equalization, sedimentation, multi media gravity sand filtration, chlorination, storage, and pumping facilities. The system will have the capability to store reclaim water during maintenance activities at the geothermal power generation plant and or to discharge into the receiving stream and remain in compliance with its NPDES Permit.

### *Project Purpose and Need*

The project is needed to generate new water for industrial demand in Imperial County, specifically to support new geothermal energy development. This 5.6 MGD will reduce demand on Colorado River Water that is supplied by the Imperial Irrigation District which is currently the only source of water for industrial projects in Imperial County. If the project is not implemented there is the possibility that in overrun years the agriculture community will need to fallow land in order for the IID to meet the industrial supply which has a higher priority.

### *Additional Information*

The city is currently improving the wastewater treatment technology at its wastewater treatment plant from

primary to an advance secondary treatment process. These improvements will be finalized and commissioning of the facility will begin the last quarter of 2011 and in compliance with the water quality control board on or before 6/ 30/2012.

# Imperial IRWMP

## *Project Benefits*

ID 9 **Title** *City of Brawley Reclaim Water Project*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* Up to 5.9MGD will be diverted from the WWTP effluent discharge and used for geothermal operations purposes. This diversion will reduce water demands from the Colorado River water system.

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | Yes |

*Explanation:* This project will divert up to 5.9 MGD of treated effluent, releasing demand from the Colorado River.

| | |
|---|---|
| **Ecosystem Restoration/Management I** | Yes |

*Explanation:* This project will divert up to 5.9 MGD of treated effluent, releasing demand from the Colorado River.

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* This project will divert up to 5.9 MGD of treated effluent, releasing demand from the Colorado River and making it available for other use.

**Other Benefits:**

*Explanation:* The purpose of the NPDES program under EPA is to eliminate discharge. This project would meet that purpose and remove the need for a fresh water supply, the Colorado River, as the water supply in an industrial cooling tower.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 9 **Title** *City of Brawley Reclaim Water Project*

***Project Schedule Information***

**Status:** Preliminary Design

**Commencement:** < 1 Year

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** Need funding to design and construct.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $12,500,000 |
| **Total of planned local funding (cost match):** | $1,354,430 |
| **Total of other non-state or federal funding:** | $6,000,000 |
| **Total project costs currently unfunded:** | $6,500,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *9* **Title** *City of Brawley Reclaim Water Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | Lee and Ro's draft alternatives study and conceptual drawings from Ormat's engineering firm |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*City of Brawley Reclaim Water Project*

*Project ID* 9

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | Yes |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Regional Wastewater Treatment and Recycled Water Project***

*Project ID* *10*

Sponsoring Agency City of Brawley and City of Imperial

Participating Agencies City of Brawley and City of Imperial

### *Project Contact Information*

Contact: Yazmin Arellano Title: Public Works Director

Email: yarellano@brawley-ca.gov Phone No: 760-344-5800

Mailing Address: 180 South Western Ave., Brawley, CA 92227

### *Project Location* City of Brawley, City of Imperial and Imperial County

### *Project Goals and Type*

Goals Regional Policy Goals

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Regional Policy Goals Objective 3: Regionalize future WWTP between Imperial County cities.

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation*

Are sponsors sought? Yes

### *Project Summary*

The City of Brawley and the City of Imperial have discussed the feasibility of constructing a Regional Wastewater Treatment Plant in the Mesquite Lake area. The City of Brawley would divert their wastewater from the south section of the City (South Of Malan Street) to this regional wastewater treatment plant. Construction of a sewage pump station and 10 mile sewage pipe line would be required for Brawley to send its raw wastewater to this treatment facility.

### *Project Purpose and Need*

The purpose is to regionalize any future WWTP and extend the life of the existing facility located north of the city and reducing the amount of wastewater infrastructure within the City's of Brawley's sphere of influence and sharing the cost in the building of the facility.

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 10 **Title** *Regional Wastewater Treatment and Recycled Water Project*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* Per City of Imperial Tertiary Treatment Plant Plans, the project will be able to supply recycled water to surrounding areas.

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Ecosystem Restoration/Management I** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* By making utilities available to the surrounding areas.

**Other Benefits:**

*Explanation:* The City would eliminate redundant wastewater collection/pumping facilities.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 10 **Title** *Regional Wastewater Treatment and Recycled Water Project*

***Project Schedule Information***

**Status:** Preliminary Design

**Commencement:** 1 - 3 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:** Need funding for planning, design, and construction

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $60,000,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $60,000,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# *Technical and Environmental Information*

**ID** *10* **Title** *Regional Wastewater Treatment and Recycled Water Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | City of Imperial performed an engineering analysis and preliminary design from Webb and Associates Engineering firm. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Regional Wastewater Treatment and Recycled Water Project*

*Project ID* 10

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | Yes |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | Yes |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | Yes |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***City of Brawley Water Meter Project***

*Project ID* *12*

Sponsoring Agency City of Brawley

Participating Agencies City of Brawley

### *Project Contact Information*

Contact: Yazmin Arellano Title: Public Works Director

Email: yarellano@brawley-ca.gov Phone No: 760-344-5800

Mailing Address: 180 South Western Ave., Brawley, CA 92227

### *Project Location* Brawley, CA 92227. Imperial County

### *Project Goals and Type*

Goals Water Supply

Type Construction

Water Supply Yes

Water Quality No

Regional Policy Goals Yes

Environmental Protection/Enhancement Yes

Flood Protection/SW Management No

Other Water Conservation

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Supply Objective 3: The project would adequately monitor usage throughout the City and cost sharing of finish water production will be equitably shall amongst all users.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* City of Brawley FY '12 Capital Improvement Program. Project #7.1008, section 7 page 9

Are sponsors sought? No

### *Project Summary*

The City of Brawley is requesting funding for the installation of water meters for its commercial and industrial, and business customers to include schools, churches and parks.The meter size range from 12 inch to .75 inch water lines. This will allow the city to implement water conservation and project water demands accurately within its service area.

### *Project Purpose and Need*

The project is needed to monitor and conserve water demands from industrial, commercial and recreational parks in the City of Brawley and implement water conservation programs.

### *Additional Information*

The city will conserve and monitor water usage efficiently and enable the operations of the water system to properly balance the water demands on its distribution system.

# Imperial IRWMP

## *Project Benefits*

ID 12 **Title** *City of Brawley Water Meter Project*

**Water Supply Benefits** Yes

*Explanation:* An estimated average capacity of 1.0 mgd will be saved from the WTP. This water saving will reduce water demands from the Colorado River water system by 365 million gallons / year.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* An estimated 1 Million Gallons per Day (MGD) will be saved of treated water.

**Ecosystem Restoration/Management I** Yes

*Explanation:* The project will create benefits by conserving Colorado River Water. up to 365 million gallons per year.

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The estimated 1MGD saved water represents savings in power, chemicals and overall treatment costs. With a yearly average of 8MGD, a 1MGD savings is equivalent to 15% costs savings in overall treatment costs.

**Economic Development Benefits** Yes

*Explanation:* By releasing water capacity at the water treatment plant. New business developments could be accommodated.

**Other Benefits:**

*Explanation:* This project would reduce water demand from the city's water treatment plant by approximately 1.0 mgd which would also reduce the demand from the Colorado River by 365 million gallons / year.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 12 **Title** *City of Brawley Water Meter Project*

***Project Schedule Information***

**Status:** Preliminary Design

**Commencement:** < 1 Year

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** Need funding for construction

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $4,000,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $4,000,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *12* **Title** *City of Brawley Water Meter Project*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | Categorical Exemption. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | Completed. |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | City Building Permit. |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | Completed. |

# Imperial IRWMP

## *State RMS and Preferences*

*City of Brawley Water Meter Project*

*Project ID* 12

### *DWR Regional Management Strategies*

#### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | Yes |
| Small Local Storage | No |

#### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

#### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

#### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | Yes |
| Industrial Proces Water Use Efficiency | Yes |

#### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

### *State Program Preferences*

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

### *Statewide Priorities Addressed*

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Keystone Water Reclamation Facility***

*Project ID* *13*

Sponsoring Agency: City of Imperial

Participating Agencies: City of Brawley is a current partner; other potential partners include Potential partners include Imperial County , City of El Centro, Imperial Valley College, and Imperial Irrigation District.

### *Project Contact Information*


Contact: Jorge Galvan, AICP  Title: Planning & Development Director

Email: jgalvan@cityofimperial.org  Phone No: 760.355.3326

Mailing Address: City of Imperial, 420 South Imperial Avenue, Imperial, CA 92251


### *Project Location*

Dogwood Road north of Harris Road, within the unincorporated Imperial County

### *Project Goals and Type*

Goals: Water Supply

Type: Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* The project proposes to reuse waste water and stormwater which demonstrates integrated resource management strategies that diversify the water supply portfolio. The project contributes to the water supply objective number 5.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* The project is consistent with City of Imperial's 1992 General Plan and the Imperial County's General 1993 Plan. Both plans discuss growth within the area of the proposed project. Complies with the Flood Plain Management Plan and the Mesquite Lake Specific Plan.

Are sponsors sought? Yes

### *Project Summary*


The Keystone Water Reclamation Facility is a regional wastewater and stormwater treatment facility that with an initial design capacity of 2.5 MGD and an ultimate treatment capacity of 15 MGD. The Project is designed to utilize membrane bioreactor technology as a means to produce highly treated tertiary effluent, which will meet all the provisions of California's Title 22 requirements. The recycled water will be utilized to offset imported potable water supplies from the Colorado River and will be suitable for heavy industrial users within the Mesquite Specific Plan Area and reuse applications such as landscape irrigation, parks, golf courses, or other recreational uses to minimize expensive pumping and distributions systems.


### *Project Purpose and Need*

In a region with the highest unemployment rate and a disproportionate number of households living under the poverty level, economic development and job creation are priority goals for the region. The County of Imperial set aside an area known as the Mesquite Lake Specific Plan (MLSP) to allow for new heavy industrial development in an area that is easily accessible by rail and surface transportation and is away from urban conflicts. There are no existing treatment facilities that can service the area. The primary goal of the Keystone Water Reclamation Facility (the first reclamation facility to be built in the County) is to create quality, wage-paying jobs for residents of the disadvantaged communities in the County. Other goals include the creation of a highly efficient reclamation facility to provide regional stormwater and wastewater treatment for surrounding communities and to provide additional recreational opportunities for the region.

### *Additional Information*

The City is in the final stages of property acquisition and will have site control within 90 days. Design is 90% complete. The draft Mitigated Negative Declaration (MND) has been circulated and comments were received. The City anticipates  certifying the MND within 90 days.

# Imperial IRWMP

## *Project Benefits*

ID 13 **Title** *Keystone Water Reclamation Facility*

**Water Supply Benefits** Yes

*Explanation:* The reclamation facility will produce measurable treated water in compliance with the State's Title 22 requirements. The first phase of the project can produce up to 2.5MGD of treated water.

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* The facility is designed to treat stormwater and provide a regional stormwater basin.

**Demand Management Benefits** Yes

*Explanation:* The City of Imperial currently utilizes a tiered rate structure and water smart readers as a means of demand side management. These methods will continue to be used for users connecting to the Keystone Water Reclamation Facility.

**Ecosystem Restoration/Management I** Yes

*Explanation:* The reclamation facility will incorporate constructed wetlands.

**Public Access Benefits:** Yes

*Explanation:* The treated effluent will be held in retention ponds which will be open to the public and developed with walking trails, educational areas, and public parking.

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The reclamation facility will be utilizing the latest energy efficient technology with a lower energy demand per gallon treated compared to current treatment facilities.

**Economic Development Benefits** Yes

*Explanation:* The project will result in the direct creation of up to 6 jobs but will also result in the indirect creation of over 2,000 jobs. One of the primary goals of the Keystone Water Reclamation Facility is to encourage industrial development within the Mesquite Lake Specific Plan area to create new industrial jobs for the county.

**Other Benefits:**

*Explanation:* The project is intended to have a regional impact and create quality, wage-paying jobs for residents of the disadvantaged communities in the County.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 13 **Title** *Keystone Water Reclamation Facility*

***Project Schedule Information***

**Status:** Final Design

**Commencement:** < 1 Year

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** The project is in need of construction funding.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $65,000,000 |
| **Total of planned local funding (cost match):** | $6,500,000 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $58,500,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** Yes

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *13* **Title** *Keystone Water Reclamation Facility*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | The project has completed the draft environmental document (MND). In addition, the final design is in 90% completion until we secure partnership commitment the project will complete 100% of the design. |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | The draft Mitigated Negative Declaration (MND) has been circulated and comments were received. |
| Does the project have a plan and schedule to complete the environmental review? | Yes |
| *Explanation* | Certification of the MND is anticipated to be completed within 3 to 6 months. |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | The project will require building permits from the County of Imperial, RWQCB permitting, and NPDES. |
| Is there a plan and schedule to complete permitting process? | Yes |
| *Explanation* | Scheduling of the project's permit requirements can be ready and submitted within 6 months prior to commencement of the project. |

# State RMS and Preferences

*Keystone Water Reclamation Facility*

*Project ID* 13

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | Yes |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | Yes |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | Yes |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***IID Systems Conservation and Improvements Projects for IWSP***

*Project ID* *14*

Sponsoring Agency Imperial Irrigation District

Participating Agencies

### *Project Contact Information*

Contact: Anisa Divine Title: Project Manager

Email: ajdivine@iid.com Phone No: 7603399036

Mailing Address: 333 E. Barioni Boulevard, Imperial, CA, 92251

### *Project Location* Multiple locations within IID Service Area

### *Project Goals and Type*

Goals Water Supply

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | Construction (Type) |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* The proposed projects would help to manage and expand the Imperial Region water supply portfolio and meet the water supply goal and related water supply objectives (wso) by: helping to meet future demands while avoiding impacts to existing users (wso 1); providing a firm, verifiable, and sustainable supply (wso 2); protect surface water rights and implement water conservation measures that demonstrate reasonable beneficial use of the available supplies (wso 4b); and be part of an integrated strategy that diversifies the regional water supply portfolio (wso 5).

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* The projects will provide water for IID assignment to new uses under the Interim Water Supply Plan. The projects is consistent with the QSA/Transfer Agreements and will develop additional conserved water beyond that necessary to meet current commitments. It is also consistent with the IID's Efficiency Conservation Definite Plan (Definite Plan, IID 2007) and System Conservation Plan and Delivery Measurement Description (SCP, System Conservation Plan, IID 2009) and IID's 2007 Water Conservation Plan (IID 2007). Imperial County General Plan - Geothermal/Alternative Energy and Transmission Element (Geothermal/Alternative Element; October 2006) was implemented to guide land use decisions and approvals. Imperial County supports and encourages the full, orderly, and efficient development of Geothermal/Alternative Energy Resources, while at the same time preserving and enhancing possible agricultural, biological, human, and recreational resources (Goal 1). The Geothermal/Alternative Energy Element identifies a need for geothermal water use of 180,000 ac-ft of water per year, stating that geothermal development will have first priority for use of "saved" and/or excess water over other uses which the County has jurisdiction (Objective 3.2). In addition, the General Plan seeks to minimize impacts to agricultural lands and biological resources (Goal 2) by carefully analyzing the potential impacts on agricultural

and biological resources from each project (Objective 2.4). Geothermal/Alternative Energy Operations are required to efficiently utilize water (Goal 3) in order to maintain at least the present level of agricultural production while encouraging efficient water use (Objective 3.1). The projects is consistent with the QSA/Transfer Agreements that allow for groundwater storage in the Coachella Basin (Agreement for Storage of Groundwater by and between the Coachella Valley Water District and Imperial Irrigation District, October 2003), and with the Coachella Valley Basin Groundwater Management Plan.

Are sponsors sought? No

## *Project Summary*

IID's System Conservation Plan (SCP) identifies water projects that capture main canal seepage using seepage recovery projects and to reduce operational spill by reoperating the system using mid-lateral reservoirs and canal/lateral interties constructed as part of the SCP. IID will implement most of the identified projects to meet it's water transfer obligations under the Quantification Settlement Agreement(QSA)/Transfer Agreements. Twenty-three (23) systems improvement projects are currently not designated for development as part of the QSA/Transfer Agreements. These system improvement projects potential yield is up to 8,000 acre-feet per year (AFY) of conserved water that can be apportioned by IID to new industrial users consistent with IID's Interim Water Supply Policy. )

## *Project Purpose and Need*

The purpose of the projects is to conserve water that could be provided to new users. Conservation with apportionment to a new use would increase the supply available in the Imperial Region, as the Colorado River water supply has been quantified. The County of Imperial General Plan Geothermal/Alternative Energy and Transmission Element identifies a need for up to 180,000 AFY for geothermal/renewable energy facilities. These renewable energy projects would provide jobs and economic development. Consistent with IRWMP Goal 1 and related objectives, the proposed system improvement projects would conserve water that would diversify the region's water supply portfolio and ensure that a long-term, verifiable, reliable, and sustainable supply is available to new users without impacting current users. The water supply made available by the proposed projects would help to meet County General Plan goals and would support Imperial County in making land use decisions by demonstrating that water is available for cooling purposes without impacts to current users. Use of conserved water, or alternative sources of supply, would also help demonstrate that the renewable energy industry is applying best management practices consistent with state requirements and guidelines. The region's existing supply of Colorado River water is fully apportioned. Without new or alternative water supplies, new development that increases water demand would be reliant on Colorado River water and this could impact existing users and/or the environment, especially in years where there are overruns. New water is needed to support growth and economic development.

## *Additional Information*

Project will be ready to proceed for grant funding.

# Imperial IRWMP

## *Project Benefits*

ID 14 **Title** *IID Systems Conservation and Improvements Projects for IWSP*

**Water Supply Benefits** Yes

*Explanation:* Approximately 8,000 AFY at a cost of $590/AF, which includes $90/AF for mitigation of impacts to IID drains and other waterways and related habitat consistent with the requirements the draft Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) and $67/AF for program administration.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* System conservation and improvement projects would capture water that would otherwise be operational spill and recover seepage related to system operations, and free up that water for beneficial use. The conserved water would be apportioned by IID to new uses and serve as a new supply in lieu of Colorado River water which is fully apportioned to current uses.

**Ecosystem Restoration/Management I** Yes

*Explanation:* To avoid, minimize and mitigate for impacts, project costs include funding ($90/AF) for mitigation of impacts to drains and other waterways. This money could be used for development of habitat, similar to the IID Managed Marsh complex developed under the QSA/Transfer Agreements, or as needed per IID HCP/NCCP requirements.

**Public Access Benefits:** Yes

*Explanation:* Habitat created with mitigation funding could provide incidental recreational as well as environmental benefits.

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** Yes

*Explanation:* The project would also support the Region's economic development and disadvantaged communities by providing a water supply to support planned growth of the communities and renewable energy industry (Technical Memorandum - Estimated Economic Impacts to Imperial to County from Conversion of Agricultural Water to Municipal and Industrial Uses. ARECon, Sept 2009.

**Other Benefits:**

*Explanation:* The project could be integrated with other projects, for example, regional mitigation banking and ecosystem enhancement projects to provide multiple benefits. In addition, it is assumed that the water would be used for cooling purposes at renewable energy facilities that would help meet the State's renewable energy portfolio goals and support efforts to reduce greenhouse gas emissions.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 14 **Title** *IID Systems Conservation and Improvements Projects for IWSP*

***Project Schedule Information***

**Status:** Ready to Construct

**Commencement:** 1 - 3 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:** Additional funding is needed to prepare plans and specifications, bid and construct the planned work.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $4,752,000 |
| **Total of planned local funding (cost match):** | $2,376,000 |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $2,376,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** Yes

**Is there a plan/schedule to finalize project funding?** No

# *Technical and Environmental Information*

**ID** *14* **Title** *IID Systems Conservation and Improvements Projects for IWSP*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | It is also consistent with the IID's Efficiency Conservation Definite Plan (Definite Plan, IID 2007) and System Conservation Plan and Delivery Measurement Description (SCP, System Conservation Plan, IID 2009). |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | These projects were identified and reviewed in the QSA/Transfer Agreement EIR/EIS. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*IID Systems Conservation and Improvements Projects for IWSP*

*Project ID* 14

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | Yes |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Spearheading with Spirulina: An Sustainable Approach to Desert Acquaculture***

*Project ID* 15

Sponsoring Agency: Southern Low Desert Resource Conservation and Development Council

Participating Agencies: Valley Spreader and Imperial Valley College (IVC)

### *Project Contact Information*


Contact: M. Gordon & Dr. P. Pauley Title: Project Coordinator & IVC Faculty

Email: valleyspreader@sbcglobal.net Phone No: 760-344-1526

Mailing Address: 260 N 9th Street, Brawley, CA 92227


### *Project Location* 250 W Schrimph Road, Calipatria CA

### *Project Goals and Type*

Goals: Regional Policy Goals

Type: Construction

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | Ancillary use of agricultural tailgate water |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Integrating resource management strategies that diversify the regional water supply portfolio by reclaiming agricultural tailgate/waste water while promoting potential economic development.

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Algae production as a component of renewable energy will require water. This proposal addresses the use of recycled water to that end. In so doing, this project seeks to extend productivity of fresh water availability by growing a secondary crop.

Are sponsors sought? Yes

### *Project Summary*


We will construct a demonstration spirulina farm utilizing inexpensive methods to build our ponds and to cultivate, dewater and solar dry our product (solar dried algae). The technologies demonstrated are:1. Cultivation using intermittently sparged trenches. 2. Nutrients can be distributed as a gas through the spargers.3. Screened drum filtration.4. Dewatering using capillary sheeting.5. Solar drying.The product will then be provided to research institutions (i.e. USDA) and commercial feed industry researchers to independently verify value as a commercial feed input. The project will implement:1. Reduction of current spirulina production costs to: a. meet lower price points for the commercial feed industry b. enable replication and expansion in the playa areas of the Salton Sea2. Distribution of product to both independent researchers and industry to: a. evaluate commercial viability of product produced with above methods b. potentially publish results.


### *Project Purpose and Need*

This application focuses on the implementation of phase one of the overall project and seeks to successfully demonstrate that spirulina can be grown at a low enough cost to be profitable as a major ingredient in fish feeds for farmed, carnivorous fish. The successful establishment of this demonstration farm will support the creation of a cooperative industry in the Imperial Valley that utilizes agricultural tail waters and the lowest quality farmland to produce a high value, environmentally conscientious product. The current market for this ingredient would easily support the development of many thousands of acres of marginal or fallowed farmland, as well as provide a mechanism to cover the salt playa as it is exposed by the shrinking of the Salton Sea. Fish farming as a worldwide industry is growing at a rate that matches the rising middle class. Harvest levels of many wild caught fish meet or exceed estimated sustainable thresholds. While the fish farming industry is taking some pressure off the oceans, the protein demand is significant and the industry relies heavily on fish meal as a major feed ingredient. Trials conducted by the USDA and private institutions have indicated spirulina has a high value as an ingredient for fish meal and can replace much of the current blend of ingredients. Unfortunately the predominant methods and costs of cultivating spirulina are currently prohibitive to expanding this supply. Spirulina produced in the United States is generally grown and packaged as a food product at a production cost of nearly $6000/ton. In Asia it is produced for considerably less, at a questionable quality and markets for about $3000/ton. For this project to demonstrate a useful fish meal replacement, production costs must stay below $1500/ton. Carbon Capture will show this can be done. To do this they will be using alternative cultivation methods and their target for food purity will be relatively low. Project advantages and benefits are significant. They include: 1. Reuse of agricultural tail water: Spirulina farming uses roughly one tenth the amount of water as conventional farming to produce a pound of protein for fish feed. Grown in aquatic systems, spirulina farming operations can use inputs of agricultural tail water and will reuse the same water until it is too saline to sustain production, at which point the alkaline salts that the pond medium requires can be reclaimed in separate evaporation ponds. 2. Reuse of manure for nutrients: This demonstration farm will further show that spirulina can be grown profitably using commercial fertilizers and no additional carbon dioxide beyond the atmospheric exchange. There will be experimentation with manure digesters to extract gas and mineral nutrients and produce methane gas. 3. The product value per gallon of water is higher than all local field crops. 4. Environmental mitigation for hazardous dust: As the shoreline of the Salton Sea recedes, the exposed playa will create a hazardous dust during wind events. The technology and approaches used in this project present a realistic method of keeping much of this land covered while supporting diversified agricultural interests and providing a secondary use for agricultural water. 5. Introduction of new crop that is not competitive to existing crops in Imperial Valley: Spirulina would be a new crop growing below its market capacity. This will encourage farms to work cooperatively rather than competitively. Spirulina does not compete for land or market with any conventional crop. 6. Environmental mitigation of using fishmeal in aquafeed: the success of this venture will help relieve pressure on wild fish populations, as feed sources for carnivorous fish farming can be heavily supplemented with protein-rich spirulina. 7. Aids other parallel research in development in algae: Developing spirulina technology is a necessary intermediate step towards growing algae for renewable fuels. The technology will also be adaptable to village life in 3rd world countries where it can become invaluable as a source of human nutrition. Carbon Capture will collaborate in this project with its existing partners including several research institutions, commercial feed producers and fish farms.

## *Additional Information*

This project will create two jobs for the operation of the farm and 3-5 jobs for pond construction within a secured area on the campus grounds of Imperial Valley College. The construction job skills are typical of employers/operators in the Imperial Valley agriculture industry. The operations jobs will probably be filled by agriculture major students from IVC.Successful completion of this project will create a new industry in the Calipatria - Niland area of the Imperial Valley, a rural area that because of its poor soil is relatively impoverished.I am attaching a trade journal article that describes some of the obstacles to using algae as a commercial product, particularly as a feed ingredient. A direct address to the article is http://www.algaeindustrymagazine.com/a-i-m-inte

# Imperial IRWMP

## *Project Benefits*

ID 15 **Title** *Spearheading with Spirulina: An Sustainable Approach to Desert Aquaculture*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* As the shoreline of the Salton Sea recedes, the exposed playa will create a hazardous dust during wind events. The technology and approaches used in this project present a realistic method of keeping much of this land covered while supporting diversified agricultural interests and providing a secondary use for agricultural water.

**Demand Management Benefits** Yes

*Explanation:* The methodology used to grow the spirulina product will reuse water inputs until they are no longer of adequate quality, thereby making the overall water demand of this project competitive with established terrestrial agricultural operations. Additionally, spirulina's product value per gallon of water is higher than field crops such as forage and sudan grasses, so spirulina farming can provide stronger economic returns per acre foot to the region. Finally, this project will blend agricultural tailwater with fresh agricultural water to cultivate spirulina, effectively providing a secondary use for waters that would otherwise be discharged into the environment, and further augmenting the water available to supply this potential new industry.

**Ecosystem Restoration/Management B** No

*Explanation:*

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** Yes

*Explanation:* Skilled labor will be required to construct, operate, and manage the facilities for algae production. Spirulina would be a new crop growing below its market capacity. This will encourage farms to work cooperatively rather than competitively. Spirulina does not compete for land or market with any conventional crop.

**Other Benefits:**

*Explanation:* Developing spirulina technology is a necessary intermediate step towards growing algae for renewable fuels. The technology will also be adaptable to village life in 3rd world countries where it can become invaluable as a source of human nutrition.

**ID** *15* **Title** *Spearheading with Spirulina: An Sustainable Approach to Desert Acquaculture*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | If funding is received through the IRWMP process, a CEQA document would be prepared. For phase 1 of the project, which spans less than 5 acres, this documentation is expected to qualify as a categorical exemption under CEQA section 15304(d), minor alterations of land. Phase 2 will require a more in depth analysis, but all work is proposed for former agricultural lands at this point, so environmental work should still be minimal. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | not required for proposed scale |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | not required for proposed scale |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | not required for proposed scale |

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 15 **Title** *Spearheading with Spirulina: An Sustainable Approach to Desert Acquaculture*

***Project Schedule Information***

**Status:** Ready to Construct

**Commencement:**

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:** The funding is sought for the creation/construct an algae trench system on the main IVC campus, securing the area from excessive traffic, and operational expenses once established.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $350,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $350,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *State RMS and Preferences*

*Spearheading with Spirulina: An Sustainable Approach to Desert Acquaculture :*

*Project ID* 15

### *DWR Regional Management Strategies*

#### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

#### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | Yes |
| Pollution Prevention | No |
| Salinity Management | No |

#### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | Yes |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

#### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | Yes |

#### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

### *State Program Preferences*

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

### *Statewide Priorities Addressed*

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Ramer Lake Conservation Plan for Water Savings***

*Project ID* *16*

Sponsoring Agency Southern Low Desert Resource Conservation and Development Council

Participating Agencies Department of Fish and Game, Imperial Irrigation District

### *Project Contact Information*

Contact: Eddy Konno Title: Sr. Environmental Scientist

Email: ekonno@dfg.ca.gov Phone No: (760) 200-9174

Mailing Address: California Department of Fish and Game 78078 Country Club Dr. Ste. 109 Bermuda Dunes CA 92203

### *Project Location* Calipatria CA

### *Project Goals and Type*

Goals Environmental Protection and Enhancement

Type Other

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Not finished developing a conservation plan with the RC&D.

Are sponsors sought? No

### *Project Summary*

Ramer Lake is part of imperial wildlife area and supports outdoor recreation including fishing, hunting and bird watching. The California Department of Fish and Game (Department) manages approximately 90 acres of land surrounding the Lake with 17 acres of shoreline. Currently both areas are heavily infested with Tamarisk (salt cedar). The Department has been removing and restoring some of the area, however funding and staff levels have been limited. The objective of this project is to remove tamarisk and restore the wildlife area in a phased approach. This is likely to result in significant water savings, as restoration will include vegetation with less evapotranspiration requirements. In phase one, 17 acres of tamarisk will be removed from the shoreline. With more open shoreline, access to the lake for such activities as fishing will be increased and the Department will be able to maintain access to the lake. In phase two, the remaining acreage will be restored in 30 acre sections. All work will be done outside of nesting season for native wildlife and in coordination with wildlife agencies. Personal communications with researchers familiar with tamarisk evapotranspiration suggest water savings from this project may range between 50 - 225 acre feet per year depending on density of the infestation.

### *Project Purpose and Need*

The Southern Low Desert RC&D Council is a locally-led, 501(c)(3) nonprofit organization whose mission is

to empower local citizens to improve their quality of life through the conservation of natural and cultural resources, and sustainable economic development. Our council membership consists of local organizations and individuals, some of whom are from the Imperial Valley area. These partners have requested the RC&D provide assistance to help restore Ramer Lake. The overgrowth of tamarisk is not only degrading the quality of wildlife habitat and consuming significant amounts of the water supply but it is also restricting the access and use of the lake for recreation. If this project is not implemented, the tamarisk establishment will continue to develop and can spread to adjoining lands. In addition, recreational use of the lake's resources will continue to decline.

*Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 16 **Title** *Ramer Lake Conservation Plan for Water Savings*

**Water Supply Benefits** Yes

*Explanation:* We are expecting to save 50-225 acre feet of water per year. This can be measured by the amount of water put in the lake by The Department.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* By reducing the amount of water needed to keep the lake full there would be less demand for water.

**Ecosystem Restoration/Management I** Yes

*Explanation:* Tamarisk provides marginal habitat for native wildlife species. By removing and restoring with native vegetation with low ET demand, the quality of habitat is increased.

**Public Access Benefits:** Yes

*Explanation:* Access to the lake shore is currently impeded by tamarisk. Removal would allow more open shoreline for public access. Upgrading the quality of habitat would increase wildlife for public viewing and may allow for trail systems.

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** No

*Explanation:*

**Other Benefits:**

*Explanation:* Improved recreation, aesthetics and reduced seed bank for spread to other areas.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 16 **Title** *Ramer Lake Conservation Plan for Water Savings*

***Project Schedule Information***

**Status:** Environmental Review

**Commencement:** < 1 Year

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $280,000 |
| **Total of planned local funding (cost match):** | $30,000 |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $280,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# *Technical and Environmental Information*

**ID** *16* **Title** *Ramer Lake Conservation Plan for Water Savings*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Ramer Lake Conservation Plan for Water Savings*

*Project ID* 16

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | Yes |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | No |
| Water Recrecation | Yes |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Imperial Valley Biogas Initiative***

*Project ID* 17

Sponsoring Agency: Southern California Gas Company

Participating Agencies: Southern California Gas Company, Imperial Valley Dairies, The San Diego Center for Algae Biotechnology, Southern Low Desert RC&D Council, Imperial Valley Economic Development Corporation, and the University of California (San Diego, Riverside and Davis)

### *Project Contact Information*

Contact: Ronald Kent  Title: Technology Development Manager

Email: rkent@semprautilities.com  Phone No: 213-244-3764

Mailing Address: 555 W. 5th Street, Los Angeles, CA 9013

### *Project Location* Imperial Valley

### *Project Goals and Type*

Goals: Water Supply

Type: Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | Yes |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | Renewable Energy |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* This project contributes to Imperial Valley objectives related to water, energy and environmental conservation, the further expansion of agriculture, economic development, education and job growth. It does so by directly involving water purification, energy production, agriculture, education and job training.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* This project directly supports California's progressive renewable energy and greenhouse gas (GHG) emissions legislation in the United States. California's Global Warming Solutions Act of 2006 (AB32) & Executive Order S-3-05 require the following GHG reductions:• by 2010, reduce GHG emissions to 2000 levels• by 2020, reduce GHG emissions to 1990 levels• by 2050, reduce GHG emissions to 80 percent below 1990 levelsExecutive Order S-06-06 committed California to expanding the sustainable use of bioenergy with the following targets:• The state should produce a minimum of 20% of its biofuels within California by 2010; 40% by 2020; 75% by 2050• 20% the state's renewable generation should come from biomass. The proposed project represents a bold step forward in meeting these goals.

Are sponsors sought? Yes

### *Project Summary*

This project presents a dynamic closed-loop, zero emissions bioenergy production facility that closes off sources of water pollution and generates high quality fresh water for downstream use. The operation will use

anaerobic digesters to process local and regional biomass residues from agriculture and waste water treatment operations to produce pipeline quality biomethane, which will be injected into the natural gas pipeline to augment current supplies at a cost savings for the operators. Byproducts including carbon dioxide and nutrient-rich water will be applied to an algal cultivation system, which will be continuously harvested and used for high value cattle feed supplement, and/or as additional feed for the anaerobic digesters, and/or for biodiesel production, depending on quality. The algae system will also clean up water quality and allow recycling with a closed-loop system, decreasing overall demand, or be made available to augment the water supply or be released for environmental enhancement. Due to several key factors in the Imperial Valley including the current agricultural climate, certainty of water supply, and strength of the agricultural industry, there is a high potential for commercial scale expansion of this type of facility which would translate into a significant number of jobs and economic activity. This project is shovel ready and already has several sites identified and $750,000 dedicated to the first installation.

### *Project Purpose and Need*

The Imperial County, despite persistent high unemployment rates, is poised to create permanent, stable jobs through the prudent stewardship of its water resources. Regional leaders have sufficient momentum to integrate a long-term economic strategy with water resources planning to guide the future of the Imperial Valley with a balance of responsible conservation and prudent economic development. According to the Imperial County Agricultural Commissioner's 2009 Crop & Livestock Report, the number one agricultural commodity in the valley is cattle, which grosses more than $285,000,000 annually. With the availability of water and locally grown feed, Imperial Valley is poised to expand and attract cattle operations, as well as other agricultural activity and industries. However, manure methane and CO2 emissions and agricultural run-off can be significant sources of environmental pollution. The goal of this project is to establish a cost-efficient, environmentally sensitive system that targets and removes a diverse suite of agricultural and municipal sources of water pollution and process them to produce commercial grade natural gas, value-added products such as cattle feed, while augmenting the water supply through system reclamation for additional downstream applications.The main objective of this project is to construct a commercial scale demonstration system and begin processing agricultural and municipal wastes, producing natural gas, kickstart an algal farming operation, and reclaim water for additional use. From this project numerous permanent jobs will be filled and educational tours can provide outreach, enhanced community awareness, as well as garner additional community support. Community-based steering committees or stakeholder groups may also be established to provide local input on the use of the reclaimed water, be it for maintaining the closed-loop system, providing for alternative agricultural or municipal purposes, or release for environmental enhancement benefits.

### *Additional Information*

This project will demonstrate and integrate renewable energy production and advanced agriculture crop cultivation with water, waste, and air resource management.We will include a world-class team from various disciplines, including Southern California Gas, the Gas Technology Institute, Scripps Institute of Oceanography and the University of California (San Diego, Riverside and Davis).

# Imperial IRWMP

## *Project Benefits*

ID 17 **Title** *Imperial Valley Biogas Initiative*

**Water Supply Benefits** Yes

*Explanation:* The algal production component of this project's system of operation will allow for water to be reclaimed from waste inputs and reused within the closed loop system. Thus, additional water inputs to the system after initial establishment will be minimal. The algal component could also expand the reclamation capacity of the project because it could present a cost-effective stand alone model to purify agricultural drain water.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* Water from this system could be recycled back to system operations with the potential of being 90-100% self sustaining after initial inputs. If water use is also put towards conservation and environmental issues, this level of self sufficiency would be decreased by an amount that could be determined by local steering groups or stakeholder committees as discussed in the previous question.

**Ecosystem Restoration/Management I** Yes

*Explanation:* The nature of this project is to target and treat significant sources of water pollution, which will inherently improve overall environmental health. However, this project presents the added flexibility of being either a closed loop system or a single-use, open system that releases some or all purified end water, potentially to canals and drains, providing for additional water enhancement which would benefit wetlands, streams and rivers, and even the Salton Sea. We believe the decision between closed vs open system functionality should be left as a local decision at each installation and be determined by a committee of stakeholders comprising environmental groups, entities like the local RCD or water agency, and farmer interests.

**Public Access Benefits:** Yes

*Explanation:* The project will be available as an education center for energy and environmental conservation.

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The anticipated production capacity of the anerobic digester using agricultural and municipal wastes is more than 2 million cubic feet of pipeline quality biomethane per day. This translates into a gross energy production of 35.2MW per day.

**Economic Development Benefits** Yes

*Explanation:* Bioenergy is a potential growth area for the Imperial Valley. The proposed project will employ dozens of workers in the development construction and operating life. If successful, this lead to many other projects and expanding employment opportunities. This project will reduce energy costs by diverting waste products into useful energy.

**Other Benefits:**

*Explanation:* We have local community buy-in from farmers and ranchers and can co-locate biomethane production and algae cultivation. This will reduce costs associated with the transportation of materials, mitigating CO2 emissions and providing immediate cost-savings to participating producers through reduced costs of energy and feed.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 17 **Title** *Imperial Valley Biogas Initiative*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** Already Started

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** The project's conceptual design has been completed. Southern California Gas Company is funding the development of three projects that will directly "A Highly Flexible Solar and Bioenergy Energy Production Platform" "Design, Engineering Specifications and Environmental Impacts for Algae-based Systems for Carbon Dioxide Capture and Recycling from Large-scale Natural Gas Combustion Processes ," and the "Escondido HARRF Biogas Upgrading Demonstration." For the proposed project needs support for the final development, design and construction activities.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $20,000,000 |
| **Total of planned local funding (cost match):** | $10,000,000 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $5,000,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *17* **Title** *Imperial Valley Biogas Initiative*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | Reports prepared with support from the Southern California Gas Company include: "DE-FE0002640: Macroalgae for CO2Capture and Renewable Energy –A Pilot Project""Escondido HARRF Biogas Upgrading Project Report"and "Imperial Valley Biogas Initiative." |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Imperial Valley Biogas Initiative*
*Project ID* 17

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | Yes |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | Yes |
| Pollution Prevention | Yes |
| Salinity Management | Yes |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | Yes |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Ave 72, Martinez Canyon Groundwater Storage Project***

*Project ID* 18

Sponsoring Agency: Imperial Irrigation District

Participating Agencies: Potential interregional projects

### *Project Contact Information*

Contact: Vince Brooke

Title: Assistant to the Water Manager

Email: vbrooke@iid.com

Phone No: 760-427-6053

Mailing Address: 333 E. Barioni Boulevard, Imperial, CA, 92251

### *Project Location*

Coachella Valley, Riverside County, California.

### *Project Goals and Type*

Goals: Water Supply

Type: Feasibility Study

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | Feasibility Study |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* At the March 2011 Water Forum meeting the Forum adopted the following priority for the Imperial IRWMP and made the finding that "Groundwater banking is the IRWMP number one priority to maximize IID's annual water supply entitlement and minimize under runs." The groundwater storage project would help meet the water supply goal and related water supply objectives (wso) by: helping to avoid impacts to existing users (wso objective 1); providing a firm, verifiable, and sustainable supply (wso objective 2); protect of surface water rights by putting the underrun water to beneficial use and optimize the Colorado River entitlements (wso objective 3), and be part of an integrated strategy (wso objective 5) to manage and expand the Imperial Region water supply portfolio.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* Imperial County General Plan - Geothermal/Alternative Energy and Transmission Element (Geothermal/Alternative Element; October 2006) was implemented to guide land use decisions and approvals. Imperial County supports and encourages the full, orderly, and efficient development of Geothermal/Alternative Energy Resources, while at the same time preserving and enhancing possible agricultural, biological, human, and recreational resources (Goal 1). The Geothermal/Alternative Energy Element identifies a need for geothermal water use of 180,000 acre-ft of water per year, stating that geothermal development will have first priority for use of "saved" and/or excess water over other uses which the County has jurisdiction (Objective 3.2). In addition, the General Plan seeks to minimize impacts to agricultural lands and biological resources (Goal 2) by carefully analyzing the potential impacts on agricultural and biological resources from each project (Objective 2.4). Geothermal/Alternative Energy Operations are required to efficiently utilize water (Goal 3) in order to maintain at least the present level of agricultural production while encouraging efficient water use (Objective 3.1).

The projects is consistent with the QSA/Transfer Agreements that allow for groundwater storage in the Coachella Basin (Agreement for Storage of Groundwater by and between the Coachella Valley Water District and Imperial Irrigation District, October 2003), and with the Coachella Valley Basin Groundwater Management Plan.

Are sponsors sought? Yes

## *Project Summary*

Through the Groundwater Storage Agreement with Coachella Valley Water District (CVWD), IID would build a groundwater recharge facility in the Martinez Canyon alluvial fan. Capacity is currently estimated at 40,000 acre feet annually. Unused entitlement water would be conveyed through the Coachella Canal to the project site and recharged into the Coachella groundwater basin. Currently, Coachella Valley has wide coverage of groundwater pumping sites for agricultural and municipal/industrial uses that would utilize the IID water recharged into the Coachella Valley aquifer. IID would receive the stored water via an exchange agreement with CVWD though the Colorado River and All American Canal.

## *Project Purpose and Need*

In order to maximize it's water supply, IID would store it's annual Colorado River Entitlement that is unused by the current annual demand. Once stored, those flows would be available in years that IID faced an increased demand or to prevent an overrun condition.

## *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 18 **Title** *Ave 72, Martinez Canyon Groundwater Storage Project*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* If the Martinez Canyon site proves to be suitable for an IID groundwater storage project, it would provide a location where IID could store it's unused entitlement water for a wide range of uses and needs for Imperial Valley's agricultural, municipal, and industrial users. Yield would be a function of the design capacity of the recharge facilities, available capacity of the Coachella Canal to convey IID water. Yield has not been firmly quantified.

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | Yes |

*Explanation:* This project would make water available for any use during times of increased agricultural demand and/or help to prevent an overrun condition. The stored water could help to avoid cutbacks to agriculture and provide a firm supply to meet demands for renewable energy.

| | |
|---|---|
| **Ecosystem Restoration/Management I** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* The project would also support the region's economic development and disadvantaged communities by providing a firm water supply to support planned growth of the communities and renewable energy industry while helping avoid impacts to existing agricultural operations. (Technical Memorandum - Estimated Economic Impacts to Imperial to County from Conversion of Agricultural Water to Municipal and Industrial Uses. ARECon, Sept 2009).

**Other Benefits:**

*Explanation:* This project could offset the possible overdraft or the development of well water quality issues in the Coachella groundwater basin, if those issues were to arise.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 18 **Title** *Ave 72, Martinez Canyon Groundwater Storage Project*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** 1 - 3 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:** Cost Estimate for Feasibility Study and on this site of $1,500,000. Funding is needed to complete feasibility study, alternatives evaluation, final design, environmental review and permitting, and construction.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *18* **Title** *Ave 72, Martinez Canyon Groundwater Storage Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | The feasibility of groundwater banking at this site has been studied by the CVWD. There is an existing model. Numerous reports are available. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Ave 72, Martinez Canyon Groundwater Storage Project*

*Project ID* 18

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | Yes |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | Yes |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | Yes |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | Yes |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Ave. 62, Thomas Levy Recharge Site.***

*Project ID* *19*

Sponsoring Agency Imperial Irrigation District

Participating Agencies Imperial Water Forum

### *Project Contact Information*

Contact: Vince Brooke Title: Assistant to the Water Manager

Email: vbrooke@iid.com Phone No: 760-427-6053

Mailing Address: 333 E. Barioni Boulevard, Imperial, CA, 92251

### *Project Location* Coachella Valley, Riverside County, California.

### *Project Goals and Type*

Goals Water Supply

Type Feasibility Study

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | Feasibility Study |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* At the March 2011 Water Forum meeting the Forum adopted the following priority for the Imperial IRWMP and made the finding that "Groundwater banking is the IRWMP number one priority to maximize IID's annual water supply entitlement and minimize under runs." The groundwater storage project would help meet the water supply goal and related water supply objectives (wso) by: helping to avoid impacts to existing users (wso objective 1); providing a firm, verifiable, and sustainable supply (wso objective 2); protect of surface water rights by putting the underrun water to beneficial use and optimize the Colorado River entitlements (wso objective 3), and be part of an integrated strategy (wso objective 5) to manage and expand the Imperial Region water supply portfolio.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* Imperial County General Plan - Geothermal/Alternative Energy and Transmission Element (Geothermal/Alternative Element; October 2006) was implemented to guide land use decisions and approvals. Imperial County supports and encourages the full, orderly, and efficient development of Geothermal/Alternative Energy Resources, while at the same time preserving and enhancing possible agricultural, biological, human, and recreational resources (Goal 1). The Geothermal/Alternative Energy Element identifies a need for geothermal water use of 180,000 ac-ft of water per year, stating that geothermal development will have first priority for use of "saved" and/or excess water over other uses which the County has jurisdiction (Objective 3.2). In addition, the General Plan seeks to minimize impacts to agricultural lands and biological resources (Goal 2) by carefully analyzing the potential impacts on agricultural and biological resources from each project (Objective 2.4). Geothermal/Alternative Energy Operations are required to efficiently utilize water (Goal 3) in order to maintain at least the present level of agricultural production while encouraging efficient water use (Objective 3.1).

The project is consistent with the QSA/Transfer Agreements that allow for groundwater storage in the Coachella Basin (Agreement for Storage of Groundwater by and between the Coachella Valley Water District and Imperial Irrigation District, October 2003), and with the Coachella Valley Basin Groundwater Management Plan.

Are sponsors sought? No

## *Project Summary*

Through the Groundwater Storage Agreement with Coachella Valley Water District (CVWD), IID would build a groundwater recharge facility in the same location as the current CVWD Thomas Levy Recharge Site. Capacity is currently estimated at 20,000-30,000 acre feet annually. Unused entitlement water would be conveyed through the Coachella Canal to the project site and recharged in the Coachella groundwater basin. Currently, Coachella Valley has wide coverage of groundwater pumping sites for agriculture and municipal/industrial uses that would utilize the IID water recharged into the Coachella Valley aquifer. IID would receive the stored water via an exchange agreement with CVWD though the Colorado River and All American Canal.

## *Project Purpose and Need*

In order to maximize it's water supply, IID would store it's annual Colorado River Entitlement that is unused by the current annual demand. Once stored, those flows would be available in years that IID faced an increased demand or to prevent an overrun condition.

## *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 19 **Title** *Ave. 62, Thomas Levy Recharge Site.*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* Yield 20,000 to 30,000 acre feet per year

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | Yes |

*Explanation:* This project would conserve Colorado River supplies by making stored water available for any use during times of increased demand, supply or demand imbalance or to prevent an overrun condition on IID's annual Colorado River entitlement; it would provide operational flexibility and help respond to Supply Demand Imbalance; also providing dry year supply to agriculture and other MCI uses, and is consistent with the IID's 2007 Water Conservation Plan (IID 2008).

| | |
|---|---|
| **Ecosystem Restoration/Management B** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* The project would also support the regions economic development and disadvantaged communities by providing a firm water supply to support planned growth of the communities and renewable energy industry while helping avoid impacts to existing agricultural operations. (Technical Memorandum - Estimated Economic Impacts to Imperial to County from Conversion of Agricultural Water to Municipal and Industrial Uses. ARECon, Sept 2009).

**Other Benefits:**

*Explanation:* This project could offset the possible overdraft or the development of well water quality issues in the Coachella groundwater basin, if those issues were to arise.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 19 **Title** *Ave. 62, Thomas Levy Recharge Site.*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** 1 - 3 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:** Funding is needed to complete feasibility study, alternatives evaluation, final design, environmental review and permitting, and construction.

**Do youhave cost estimates?** No

| | |
|---|---|
| **Total Estimated Cost:** | |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *19* **Title** *Ave. 62, Thomas Levy Recharge Site.*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | The feasibility of groundwater banking at this site has been studied by the CVWD. There is an existing model. Numerous reports are available. |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | The existing project has undergone environmental review and permitting. It is likely that expansion could use the information and/or tier off of the existing documents. Further scoping is needed. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | The existing project is permitted and operational. It is likely that the existing permits could be modified for an expanded facility. |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# Imperial IRWMP

## *State RMS and Preferences*

*Ave. 62, Thomas Levy Recharge Site.*

*Project ID* 19

### *DWR Regional Management Strategies*

#### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | Yes |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

#### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | Yes |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

#### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | Yes |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | Yes |
| Water Recrecation | No |
| Water Exchanges | Yes |

#### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

#### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

### *State Program Preferences*

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

### *Statewide Priorities Addressed*

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***East Mesa Groundwater Storage Project***

*Project ID* *20*

Sponsoring Agency Imperial Irrigation District

Participating Agencies Imperial Water Forum

### *Project Contact Information*


Contact: Vince Brooke Title: Assistant to the Water Manager

Email: vbrooke@iid.com Phone No: 760-427-6053

Mailing Address: 333 E. Barioni Boulevard, Imperial, CA, 92251


### *Project Location* East Mesa, Imperial County, California.

### *Project Goals and Type*

Goals Water Supply

Type Feasibility Study

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | Feasibility Study |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* At the March 2011 Water Forum meeting the Forum adopted the following priority for the Imperial IRWMP and made the finding that "Groundwater banking is the IRWMP number one priority to maximize IID's annual water supply entitlement and minimize under runs." The groundwater storage project would help to manage and expand the Imperial Region water supply portfolio and meet the water supply goal and related water supply objectives (wso) by: helping to avoid impacts to existing users (wso 1); providing a firm, verifiable, and sustainable supply (wso 2); protect of surface water rights by putting the underrun water to beneficial use and optimize the Colorado River entitlements (wso 3), and be part of an integrated strategy (wso 5).

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* Imperial County General Plan - Geothermal/Alternative Energy and Transmission Element (Geothermal/Alternative Element; October 2006) was implemented to guide land use decisions and approvals. Imperial County supports and encourages the full, orderly, and efficient development of Geothermal/Alternative Energy Resources, while at the same time preserving and enhancing possible agricultural, biological, human, and recreational resources (Goal 1). The Geothermal/Alternative Energy Element identifies a need for geothermal water use of 180,000 ac-ft of water per year, stating that geothermal development will have first priority for use of "saved" and/or excess water over other uses which the County has jurisdiction (Objective 3.2). In addition, the General Plan seeks to minimize impacts to agricultural lands and biological resources (Goal 2) by carefully analyzing the potential impacts on agricultural and biological resources from each project (Objective 2.4). Geothermal/Alternative Energy Operations are required to efficiently utilize water (Goal 3) in order to maintain at least the present level of agricultural production while encouraging efficient water use (Objective 3.1).

The projects is consistent with the QSA/Transfer Agreements that allow for groundwater storage in the Coachella Basin (Agreement for Storage of Groundwater by and between the Coachella Valley Water District and Imperial Irrigation District, October 2003), and with the Coachella Valley Basin Groundwater Management Plan.

Are sponsors sought? No

## *Project Summary*

On the East Mesa Project IID would build a groundwater recharge facility over the East Mesa ground water basin. The Aquifer is relatively undefined and there are no annual capacity estimates. Two studies indicate that this aquifer could recharge from 700,00 to 1,000,000 acre feet total. Annual unused entitlement water would be conveyed through the All American Canal or the Coachella Canal to the project site and recharged into the East Mesa aquifer. The project facility, conveyance for the recharge delivery, and conveyance for distribution would be developed following a full East Mesa groundwater basin study. The study will determine all characteristics of the basin, annual recharge capacity, current groundwater quality, and the best size and location of the facility.

## *Project Purpose and Need*

In order to maximize it's water supply, IID would store it's annual Colorado River Entitlement that is unused by the current annual demand. Once stored, those flows would be available in years that IID faced an increased demand or to prevent an overrun condition.

## *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 20 **Title** *East Mesa Groundwater Storage Project*

**Water Supply Benefits** Yes

*Explanation:* If East Mesa proves to be a suitable site for an IID groundwater storage project, it would provide a location where IID could store it's unused entitlement water for a wide range of uses and needs for Imperial Valley's agricultural, municipal, and industrial users. Project yield is expected to be in the 40,0000 to 60,000 acre-feet per year range.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* This project would conserve Colorado River supplies by making stored water available for any use during times of increased demand, supply or demand imbalance or to prevent an overrun condition on IID's annual Colorado River entitlement; it would provide operational flexibility and help respond to Supply Demand Imbalance; also providing dry year supply to agriculture and other MCI uses, and is consistent with the IID's Efficiency Conservation Definite Plan (Definite Plan, IID 2007) and System Conservation Plan and Delivery Measurement Description (SCP, System Conservation Plan, IID 2009) and IID's 2007 Water Conservation Plan (IID 2008).

**Ecosystem Restoration/Management B** No

*Explanation:*

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** Yes

*Explanation:* The project would also support the Region's economic development and disadvantaged communities by providing a water supply to support planned growth of the communities and renewable energy industry (Technical Memorandum - Estimated Economic Impacts to Imperial to County from Conversion of Agricultural Water to Municipal and Industrial Uses. ARECon, Sept 2009.)

**Other Benefits:**

*Explanation:*

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 20 **Title** *East Mesa Groundwater Storage Project*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** < 1 Year

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** Funding is needed for feasibility study, site characterization, projects design, environmental review and permitting, and for construction.

**Do youhave cost estimates?** No

| | |
|---|---|
| **Total Estimated Cost:** | |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** Yes

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *20* **Title** *East Mesa Groundwater Storage Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | Reconnaissance level evaluation of the East Mesa area and preliminary cost for a number of project concepts were completed as part of the Draft IID Plan. An inventory of existing technical studies and documentation is complete. An additional peer review and desk top evaluation of the review of the prior investigations and data is to be completed in the first quarter of 2012. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*East Mesa Groundwater Storage Project*

*Project ID* 20

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | Yes |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | Yes |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | Yes |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | Yes |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Painted Canyon***

*Project ID* *21*

Sponsoring Agency Imperial Irrigation District

Participating Agencies Imperial Water Forum

### *Project Contact Information*

Contact: Vince Brooke Title: Assistant to the Water Manager

Email: vbrooke@iid.com Phone No: 760-427-6053

Mailing Address: 333 E. Barioni Boulevard, Imperial, CA, 92251

### *Project Location* East Mesa, Imperial County, California.

### *Project Goals and Type*

Goals Water Supply

Type Feasibility Study

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | Feasibility Study |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* At the March 2011 Water Forum meeting the Forum adopted the following priority for the Imperial IRWMP and made the finding that "Groundwater banking is the IRWMP number one priority to maximize IID's annual water supply entitlement and minimize under runs." The groundwater storage project would help to manage and expand the Imperial Region water supply portfolio and meet the water supply goal and related water supply objectives (wso) by: helping to avoid impacts to existing users (wso 1); providing a firm, verifiable, and sustainable supply (wso 2); protect of surface water rights by putting the underrun water to beneficial use and optimize the Colorado River entitlements (wso 3), and be part of an integrated strategy (wso 5).

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* Imperial County General Plan - Geothermal/Alternative Energy and Transmission Element (Geothermal/Alternative Element; October 2006) was implemented to guide land use decisions and approvals. Imperial County supports and encourages the full, orderly, and efficient development of Geothermal/Alternative Energy Resources, while at the same time preserving and enhancing possible agricultural, biological, human, and recreational resources (Goal 1). The Geothermal/Alternative Energy Element identifies a need for geothermal water use of 180,000 ac-ft of water per year, stating that geothermal development will have first priority for use of "saved" and/or excess water over other uses which the County has jurisdiction (Objective 3.2). In addition, the General Plan seeks to minimize impacts to agricultural lands and biological resources (Goal 2) by carefully analyzing the potential impacts on agricultural and biological resources from each project (Objective 2.4). Geothermal/Alternative Energy Operations are required to efficiently utilize water (Goal 3) in order to maintain at least the present level of agricultural production while encouraging efficient water use (Objective 3.1).

The project is consistent with the QSA/Transfer Agreements that allow for groundwater storage in the Coachella Basin (Agreement for Storage of Groundwater by and between the Coachella Valley Water District and Imperial Irrigation District, October 2003), and with the Coachella Valley Basin Groundwater Management Plan.

Are sponsors sought? No

## *Project Summary*

Through the Groundwater Storage Agreement with Coachella Valley Water District (CVWD), IID would build a groundwater recharge facility in the Painted Canyon alluvial fan. Capacity is currently estimated at 80,000-100,000 acre feet annually. Unused entitlement water would be conveyed through the Coachella Canal to the project site and recharged in the Coachella groundwater basin. Currently, Coachella Valley has wide coverage of groundwater pumping sites for agriculture and municipal/industrial uses that would utilize the IID water recharged into the Coachella Valley aquifer. IID would receive the stored water via an exchange agreement with CVWD though the Colorado River and All American Canal.

## *Project Purpose and Need*

In order to maximize it's water supply, IID would store it's annual Colorado River Entitlement that is unused by the current annual demand. Once stored, those flows would be available in years that IID faced an increased demand or to prevent an overrun condition.

## *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 21 **Title** *Painted Canyon Groundwater Storage Project*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* If Painted Canyon proves to be a suitable site for an IID groundwater storage project, it would provide a location where IID could store it's unused entitlement water for a wide range of uses and needs for Imperial County's agricultural, municipal, and industrial users. Yield is in the range of 40,000 to 60,000 acre-feet per year.

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | Yes |

*Explanation:* This project would conserve Colorado River supplies by making stored water available for any use during times of increased demand, supply or demand imbalance or to prevent an overrun condition on IID's annual Colorado River entitlement; it would provide operational flexibility and help respond to Supply Demand Imbalance; also providing dry year supply to agriculture and other MCI uses, and is consistent with the IID's Efficiency Conservation Definite Plan (Definite Plan, IID 2007) and System Conservation Plan and Delivery Measurement Description (SCP, System Conservation Plan, IID 2009) and IID's 2007 Water Conservation Plan (2007 WCP, IID 2008).

| | |
|---|---|
| **Ecosystem Restoration/Management B** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* The project would also support the Region's economic development and disadvantaged communities by providing a water supply to support planned growth of the communities and renewable energy industry (Technical Memorandum - Estimated Economic Impacts to Imperial to County from Conversion of Agricultural Water to Municipal and Industrial Uses. ARECon, Sept 2009.)

**Other Benefits:**

*Explanation:* This project could offset the possible overdraft or the development of well water quality issues in the Coachella groundwater basin, if those issue were to arise.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 21 **Title** *Painted Canyon*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** < 1 Year

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *21* **Title** *Painted Canyon*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | Preliminary basin characterization and assessment has been conducted and a reconnaissance level design and cost prepared. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# *State RMS and Preferences*

*Painted Canyon*

*Project ID* 21

## *DWR Regional Management Strategies*

### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | Yes |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | Yes |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## *State Program Preferences*

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## *Statewide Priorities Addressed*

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Upgrade (Holt Avenue, Imperial to 12th)***

*Project ID* 22

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603374505

Mailing Address: 307 West Brighton, El Centro, Ca 92243

### *Project Location* Holt Avenue, Imperial to 12th

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Extend existing storm drain and construct new storm drain.

### *Project Purpose and Need*

Existing storm drain undersized.

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 22 **Title** *Drainage Upgrade (Holt Avenue, Imperial to 12th)*

| | |
|---|---|
| **Water Supply Benefits** | No |
| *Explanation:* | |
| **Flood Protection/Stormwater Management Benefits** | Yes |
| *Explanation:* | Reduces street flooding |
| **Demand Management Benefits** | No |
| *Explanation:* | |
| **Ecosystem Restoration/Management F** | No |
| *Explanation:* | |
| **Public Access Benefits:** | Yes |
| *Explanation:* | Improves access for emergency vehicles |
| **Power Cost Savings or Production Benefits** | No |
| *Explanation:* | |
| **Economic Development Benefits** | No |
| *Explanation:* | |
| **Other Benefits:** | |
| *Explanation:* | |

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 22 **Title** *Drainage Upgrade (Holt Avenue, Imperial to 12th)*

***Project Schedule Information***

**Status:** Planning

**Commencement:** 3 - 6 Years

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $468,455 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $468,455 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# *Technical and Environmental Information*

**ID** *22* **Title** *Drainage Upgrade (Holt Avenue, Imperial to 12th)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Drainage Upgrade (Holt Avenue, Imperial to 12th)*

*Project ID* 22

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Upgrade (Development west of Wake Ave and 8th St: Cypress Dr: Farmer Dr: 10th St: 9th St)***

*Project ID* *23*

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603374505

Mailing Address: 307 West Brighton, El Centro,CA 92243

### *Project Location*

Development west of Wake Ave and 8th St: Cypress Dr: Farmer Dr: 10th St: 9th St

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Upgrade existing storm drain and add catch basins.

### *Project Purpose and Need*

Existing storm drain undersized.

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 23 **Title** *Drainage Upgrade (Development west of Wake Ave and 8th St: Cypress Dr: Farmer Dr: 10th St: 9th St)*

| | |
|---|---|
| **Water Supply Benefits** | No |
| *Explanation:* | |
| **Flood Protection/Stormwater Management Benefits** | Yes |
| *Explanation:* | Project will reduce flooding issues as development continues. |
| **Demand Management Benefits** | No |
| *Explanation:* | |
| **Ecosystem Restoration/Management I** | No |
| *Explanation:* | |
| **Public Access Benefits:** | Yes |
| *Explanation:* | improves access for emergency vehicles |
| **Power Cost Savings or Production Benefits** | No |
| *Explanation:* | |
| **Economic Development Benefits** | No |
| *Explanation:* | |
| **Other Benefits:** | |
| *Explanation:* | |

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 23 **Title** *Drainage Upgrade (Development west of Wake Ave and 8th St: Cypress Dr: Farmer Dr: 10th St: 9th St)*

***Project Schedule Information***

**Status:** Planning

**Commencement:** > 6 Years

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $1,000,848 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $1,000,848 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *23* **Title** *Drainage Upgrade (Development west of Wake Ave and 8th St: Cypress Dr: Farmer Dr: 10th St: 9th St)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# Imperial IRWMP

## *State RMS and Preferences*

*Drainage Upgrade (Development west of Wake Ave and 8th St: Cypress Dr: Farmer Dr: 10th St: 9th St)*

*Project ID* 23

### *DWR Regional Management Strategies*

#### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

#### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

#### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

#### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

#### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

### *State Program Preferences*

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

### *Statewide Priorities Addressed*

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Upgrade (Broadway St., No. Eighth St., Commercial Ave. from Imperial Ave to sixth street.)***

*Project ID* 24

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603374505

Mailing Address: 307 West Brighton, El Centro, Ca 92243

### *Project Location*

Broadway St., No. Eighth St., Commercial Ave. from Imperial Ave to sixth street.

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Existing storm drains under capacity.

### *Project Purpose and Need*

Relief drain to relieve flooding on Imperial Avenue at Main Street.

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 24 **Title** *Drainage Upgrade (Broadway St., No. Eighth St., Commercial Ave. from Imperial Ave to sixth street.)*

| | |
|---|---|
| **Water Supply Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | Yes |

*Explanation:* Project will reduce flooding on Imperial Avenue which is a major thoroughfare for the City

| | |
|---|---|
| **Demand Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Ecosystem Restoration/Management I** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | Yes |

*Explanation:* improves access for emergency vehicles

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | No |

*Explanation:*

**Other Benefits:**

*Explanation:* by reducing the flooding on Imperial Avenue, the vector and public health issues due to contamination will be significantly reduced.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 24 **Title** *Drainage Upgrade (Broadway St., No. Eighth St., Commercial Ave. from Imperial Ave to sixth street.)*

***Project Schedule Information***

**Status:** Planning

**Commencement:** 1 - 3 Years

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $5,653,723 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $5,653,723 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *24* **Title** *Drainage Upgrade (Broadway St., No. Eighth St., Commercial Ave. from Imperial Ave to sixth street.)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# *State RMS and Preferences*

*Drainage Upgrade (Broadway St., No. Eighth St., Commercial Ave. from Imperial Ave to sixth street.)*

*Project ID* 24

## *DWR Regional Management Strategies*

### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## *State Program Preferences*

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## *Statewide Priorities Addressed*

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Upgrade (Dogwood Rd., Ross Rd., Heil Ave., Hope Ave. between 1st and Orange)***

*Project ID* *25*

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603374505

Mailing Address: 307 West Brighton, El Centro, CA 92243

### *Project Location* Dogwood Rd., Ross Rd., Heil Ave., Hope Ave. between 1st and Orange

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Extend storm drain and add catch basins.

### *Project Purpose and Need*

Flooding along street - flow depth exceeds top of curb

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 25 **Title** *Drainage Upgrade (Dogwood Rd., Ross Rd., Heil Ave., Hope Ave. between 1st and Orange)*

| | |
|---|---|
| **Water Supply Benefits** | No |
| *Explanation:* | |
| **Flood Protection/Stormwater Management Benefits** | Yes |
| *Explanation:* | reduces street flooding |
| **Demand Management Benefits** | No |
| *Explanation:* | |
| **Ecosystem Restoration/Management I** | No |
| *Explanation:* | |
| **Public Access Benefits:** | Yes |
| *Explanation:* | improves access for emergency vehicles |
| **Power Cost Savings or Production Benefits** | No |
| *Explanation:* | |
| **Economic Development Benefits** | No |
| *Explanation:* | |
| **Other Benefits:** | |
| *Explanation:* | |

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 25 **Title** *Drainage Upgrade (Dogwood Rd., Ross Rd., Heil Ave., Hope Ave. between 1st and Orange)*

***Project Schedule Information***

**Status:** Planning

**Commencement:** > 6 Years

**Completion:** > 6 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $7,371,448 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $7,371,448 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *25* **Title** *Drainage Upgrade (Dogwood Rd., Ross Rd., Heil Ave., Hope Ave. between 1st and Orange)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# Imperial IRWMP

## *State RMS and Preferences*

*Drainage Upgrade (Dogwood Rd., Ross Rd., Heil Ave., Hope Ave. between 1st and Orange)*

*Project ID* 25

### *DWR Regional Management Strategies*

#### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

#### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

#### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

#### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

#### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

### *State Program Preferences*

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

### *Statewide Priorities Addressed*

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Upgrade (La Brucherie Rd. to 23rd; Barbara Worth Ave. to Orange)***

*Project ID* 26

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603374505

Mailing Address: 307 West Brighton, El Centro, Ca 92243

### *Project Location* La Brucherie Rd. to 23rd; Barbara Worth Ave. to Orange

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Extend storm drain and add catch basins.

### *Project Purpose and Need*

Flooding along street - exceeds top of curb

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 26 **Title** *Drainage Upgrade (La Brucherie Rd. to 23rd; Barbara Worth Ave. to Orange)*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* reduces street flooding

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management F** No

*Explanation:*

**Public Access Benefits:** Yes

*Explanation:* improves access for emergency vehicles

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** No

*Explanation:*

**Other Benefits:**

*Explanation:*

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 26 **Title** *Drainage Upgrade (La Brucherie Rd. to 23rd; Barbara Worth Ave. to Orange)*

***Project Schedule Information***

**Status:** Planning

**Commencement:** 3 - 6 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $652,273 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $652,273 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *26* **Title** *Drainage Upgrade (La Brucherie Rd. to 23rd; Barbara Worth Ave. to Orange)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Drainage Upgrade (La Brucherie Rd. to 23rd; Barbara Worth Ave. to Orange)*

*Project ID* 26

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Upgrade (8th St., Woodward to Villa)***

*Project ID* 27

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603344505

Mailing Address: 307 West Brighton, El Centro, CA 92243

### *Project Location* 8th St., Woodward to Villa

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Extend storm drain and add catch basins.

### *Project Purpose and Need*

Flooding along street exceeds top of curb

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 27 **Title** *Drainage Upgrade (8th St., Woodward to Villa)*

| | |
|---|---|
| **Water Supply Benefits** | No |
| *Explanation:* | |
| **Flood Protection/Stormwater Management Benefits** | Yes |
| *Explanation:* | reduces street flooding |
| **Demand Management Benefits** | No |
| *Explanation:* | |
| **Ecosystem Restoration/Management F** | No |
| *Explanation:* | |
| **Public Access Benefits:** | Yes |
| *Explanation:* | improves access for emergency vehicles |
| **Power Cost Savings or Production Benefits** | No |
| *Explanation:* | |
| **Economic Development Benefits** | No |
| *Explanation:* | |
| **Other Benefits:** | |
| *Explanation:* | |

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 27 **Title** *Drainage Upgrade (8th St., Woodward to Villa)*

***Project Schedule Information***

**Status:** Planning

**Commencement:** 3 - 6 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $1,080,684 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $1,080,684 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *27* **Title** *Drainage Upgrade (8th St., Woodward to Villa)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Drainage Upgrade (8th St., Woodward to Villa)*

*Project ID* 27

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## General Project Information

### ***Drainage Upgrade (Lincoln Ave.; 6th St.)***

*Project ID* 28

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603344505

Mailing Address: 307 West Brighton, El Centro, CA 92243

### *Project Location* Lincoln Ave.; 6th St.

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Extend storm drain from 8th St. and add catch basins.

### *Project Purpose and Need*

Flooding along street exceeds top of curb.

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 28 **Title** *Drainage Upgrade (Lincoln Ave.; 6th St.)*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* reduces street flooding

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management F** No

*Explanation:*

**Public Access Benefits:** Yes

*Explanation:* improves access for emergency vehicles

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** No

*Explanation:*

**Other Benefits:**

*Explanation:*

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 28 **Title** *Drainage Upgrade (Lincoln Ave.; 6th St.)*

***Project Schedule Information***

**Status:** Planning

**Commencement:** 3 - 6 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $1,570,900 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $1,570,900 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *28* **Title** *Drainage Upgrade (Lincoln Ave.; 6th St.)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Drainage Upgrade (Lincoln Ave.; 6th St.)*

*Project ID* 28

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Drainage Upgrade (Oak St. from San Diego to Villa)***

*Project ID* 29

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603374505

Mailing Address: 307 West Brighton, El Centro, Ca 92243

### *Project Location* Oak St. from San Diego to Villa

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Extend storm drain from area and add catch basins.

### *Project Purpose and Need*

severe street flooding

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 29 **Title** *Drainage Upgrade (Oak St. from San Diego to Villa)*

| | |
|---|---|
| **Water Supply Benefits** | No |
| *Explanation:* | |
| **Flood Protection/Stormwater Management Benefits** | Yes |
| *Explanation:* | reduces street flooding |
| **Demand Management Benefits** | No |
| *Explanation:* | |
| **Ecosystem Restoration/Management F** | No |
| *Explanation:* | |
| **Public Access Benefits:** | Yes |
| *Explanation:* | current system causes streets to flood making them impassable. this project will restore traffic through the area |
| **Power Cost Savings or Production Benefits** | No |
| *Explanation:* | |
| **Economic Development Benefits** | No |
| *Explanation:* | |
| **Other Benefits:** | |
| *Explanation:* | |

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 29 **Title** *Drainage Upgrade (Oak St. from San Diego to Villa)*

***Project Schedule Information***

**Status:** Planning

**Commencement:**

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $595,039 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $595,039 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *29* **Title** *Drainage Upgrade (Oak St. from San Diego to Villa)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Drainage Upgrade (Oak St. from San Diego to Villa)*

*Project ID* 29

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Upgrade (Evan Hewes Hwy. Dogwood to Cooley)***

*Project ID* 30

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603374505

Mailing Address: 307 West Brighton, El Centro, CA 92243

### *Project Location* Evan Hewes Hwy. Dogwood to Cooley

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Extend existing storm drain construct new storm drain.

### *Project Purpose and Need*

Flooding along street into businesses

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 30 **Title** *Drainage Upgrade (Evan Hewes Hwy. Dogwood to Cooley)*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* project will reduce flooding of businesses due to drainage facilities that are too small

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management F** No

*Explanation:*

**Public Access Benefits:** Yes

*Explanation:* improves access for emergency vehicles

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** No

*Explanation:*

**Other Benefits:**

*Explanation:*

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 30 **Title** *Drainage Upgrade (Evan Hewes Hwy. Dogwood to Cooley)*

***Project Schedule Information***

**Status:** Planning

**Commencement:**

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $3,633,099 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $3,633,099 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *30* **Title** *Drainage Upgrade (Evan Hewes Hwy. Dogwood to Cooley)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Drainage Upgrade (Evan Hewes Hwy. Dogwood to Cooley)*

*Project ID* 30

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Upgrade (8th St. from Villa to Central Main Drain)***

*Project ID* *31*

Sponsoring Agency City of El Centro

Participating Agencies

### *Project Contact Information*

Contact: Randy Hines Title: WWTP Supervisor

Email: rhines@ecpw.org Phone No: 7603344505

Mailing Address: 307 West Brighton, El Centro, CA 92243

### *Project Location* 8th St. from Villa to Central Main Drain

### *Project Goals and Type*

Goals Flood/Floodplain Management

Type Construction

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? No

*Explanation*

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* Storm Water Master Plan

Are sponsors sought? No

### *Project Summary*

Upgrade existing storm drain and add catch basins.

### *Project Purpose and Need*

Existing storm drain undersized.

### *Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 31 **Title** *Drainage Upgrade (8th St. from Villa to Central Main Drain)*

| | |
|---|---|
| **Water Supply Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | Yes |

*Explanation:* project will reduce flooding of street next to elementary school

| | |
|---|---|
| **Demand Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Ecosystem Restoration/Management I** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | Yes |

*Explanation:* improves access for emergency vehicles

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | No |

*Explanation:*

**Other Benefits:**

*Explanation:*

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 31 **Title** *Drainage Upgrade (8th St. from Villa to Central Main Drain)*

***Project Schedule Information***

**Status:** Planning

**Commencement:** > 6 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:**

**Do youhave cost estimates?**

| | |
|---|---|
| **Total Estimated Cost:** | $3,069,597 |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | $3,069,597 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *31* **Title** *Drainage Upgrade (8th St. from Villa to Central Main Drain)*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Drainage Upgrade (8th St. from Villa to Central Main Drain)*
*Project ID* 31

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Water distribution storage tanks, 2 each 5MG***

*Project ID* *32*

Sponsoring Agency City of El Centro

Participating Agencies City of El Centro

### *Project Contact Information*

Contact: Terry Hagen, PE Title: City Engineer/Director of Public Works

Email: thagen@cityofelcentro.org Phone No: 760.337.4505

Mailing Address: 307 W. Brighton, El Centro, CA 92243

*Project Location* La Brucherie / Barbara Worth and 3010 S. 8th Street, El Centro, CA 92243

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* -Support disadvantaged and other communities in meeting drinking water standards. The City of El Centro is an economic disadvantaged community. Increasing storage capacity will protect drinking water supply while permitting additional growth in the city which may create new jobs.
-Recognize and mitigate impacts of proposed projects on disadvantaged communities to ensure environmental justice.
Providing additional storage capacity will increase fire flow protection and ensure adequate water supply.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* The project is consistent with the goals of the City of El Centro's General Plan PF-10 pg A-12.The project is further consistent with the City's Water Master Plan and is identified in the City's Capital Improvement Program

Are sponsors sought? No

### *Project Summary*

Construct two water distribution storage tanks, each 5 million gallons.

### *Project Purpose and Need*

The project is a health and safety project. The project will provide better fire flow protection. The additional storage capacity will permit the maintenance of adequate water pressure during fire flow events.
_x000D_Currently the City of El Centro has less than one day's consumption worth of storage capacity

during the summer months, which is inadequate should the city's water plant shutdown for more than a few hours creating a health and safety concern.

*Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 32 **Title** *Water distribution storage tanks, 2 each 5MG*

**Water Supply Benefits** Yes

*Explanation:* Project will provide longer fire flow protection. Will provide an increase in volume storage capacity of 10 million gallons and help maintain the city's water pressure.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* Project will provide longer fire flow protection. Will provide an increase in volume storage capacity of 10 million gallons and help maintain the city's water pressure.

**Ecosystem Restoration/Management I** No

*Explanation:*

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** Yes

*Explanation:* Project will promote economic development by providing a stable water supply and extended fire flow protection.

**Other Benefits:**

*Explanation:* Benefits are fire flow protection and increased storage capacity. Currently in the summer there is less than one days worth of water consumption available in storage.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 32 **Title** *Water distribution storage tanks, 2 each 5MG*

***Project Schedule Information***

**Status:** Preliminary Design

**Commencement:** 1 - 3 Years

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:** The City has the required land for the tanks. Funding is required to construct the storage tanks and for construction management. We are requesting a waiver from the 25% match due to our economic disadvantaged status.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $10,000,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $10,000,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *32* **Title** *Water distribution storage tanks, 2 each 5MG*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | The City has a rate study that identifies the project. It is removed from the study for lack of funding. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | The land is identified and the tanks would be adjacent to existing tanks. A negative declaration is anticipated. |
| Does the project have a plan and schedule to complete the environmental review? | Yes |
| *Explanation* | Environmental can be completed in three months from notification of funding being available. The land is properly zoned for the use. |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | Not yet, however this can be processed efficiently once funding is identified. |
| Is there a plan and schedule to complete permitting process? | Yes |
| *Explanation* | The City is familiar with permitting processes and will pursue permitting efficiently one funding is identified. |

# State RMS and Preferences

*Water distribution storage tanks, 2 each 5MG*

*Project ID* 32

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | Yes |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | Yes |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Poe Colonia Wastewater Treatment Plant Upgrade***

*Project ID* *33*

Sponsoring Agency County of Imperial

Participating Agencies County of Imperial, City of Calexico, City of El Centro, City of Imperial and IID

### *Project Contact Information*

Contact: Codie Rowin Title: Administrative Analyst I

Email: codierowin@co.imperial.ca.us Phone No: (760) 482-4462

Mailing Address: 155 South 11th Street, El Centro, California 92243

*Project Location* North end of Poe Colonia Road, approximately 1 mile west of the City of Brawley 0.5 miles southwest of the intersection of Highway 78 and Kalin Road in Imperial County, California

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | Wastewater Treatment Plant |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* The plant services homes in a designated colonia. Colonias are defined as rural communities located with 150 miles of the U.S. - Mexico border that lack adequate infrastructure and often lack basic services such as running water, electricity and paved roads. The project, therefore, meets the objective of supporting a disadvantaged community. The project is in the conceptual phase, however, the County would like to research ways to recycle/re-use the wastewater, perhaps by partnering with private industry.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* The Imperial County General Plan Overview discusses Water and Sewer beginning at Page 10a. The Plan does not specifically name POE Colonia; however, it states that rural residences on existing lots and minor subdivisions generally utilize septic tanks and leach line systems that generally require a minimum lot size of 20,00 square feet (approximately one half acre) per dwelling unity for approval by the County Health Department. Therefore, the newer homes in the Colonia, with smaller lot size, must be serviced by a public sewer system. Older homes in the Colonia, that at one time utilized septic systems, now also utilize the Poe Colonia wastewater treatment plant.

Are sponsors sought? Yes

### *Project Summary*

Replace portions of, or replace, entire wastewater treatment plant. Portions succeptible to damage or in need of replacement include underground tanks, drip basins, leach lines and associated lines, pumps and electric system.

## *Project Purpose and Need*

The current wastewater treatment plant uses an alternate design, which is susceptible to repeated damage from flooding and seismic activity. The plant services a newer affordable housing community of approximately 80 residential single family units, as well as several older homes, in a designated colonia. The 7.2 magnitude earthquake of 4/4/10 caused the collapse of pumps (from septic and closing tanks), which needed to be recovered into place and then held in place by ropes tethered to adjacent switch stands or fence posts. The PVC pipes were temporarily reconnected and the pumps remained in use (though they did not operate optimally), until they were repaired with FEMA funds. The system should be replaced with an efficient, reliable system to reduce the possibility of complete failure of the system.

## *Additional Information*

Imperial County would like to obtain funds to improve wastewater treatment facilities for Poe Colonia. We will seek information and guidance to help us develop a project that will meet IRWMP goals, while keeping the project affordable and attainable.

# Imperial IRWMP

## *Project Benefits*

ID 33 **Title** *Poe Colonia Wastewater Treatment Plant Upgrade*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* The project is in the conceptual phase; however the intent is that the project will utilize treated wastewater for irrigation, or other methods of recycling/re-use of the treated wastewater.

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | Yes |

*Explanation:* The County intends to investigate project alternatives that will re-utilize and recycle treated wastewater.

| | |
|---|---|
| **Ecosystem Restoration/Management I** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | Yes |

*Explanation:* The County will investigate project alternatives to determine whether there are ways to construct a plant that will provide power cost savings over the current treatment plant.

| | |
|---|---|
| **Economic Development Benefits** | No |

*Explanation:*

**Other Benefits:**

*Explanation:* Residents of the Poe Colonia will have a reliable wastewater treatment system, less likely to be susceptible to damage caused by flooding and seismic activity. The project will decrease the likelihood of health and safety issues caused by failure of the current system. The community is comprised of disadvantaged/under-advantaged citizens. This project will provide up-to-date, reliable infrastructure, that would otherwise be impossible for them to obtain.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 33 **Title** *Poe Colonia Wastewater Treatment Plant Upgrade*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** 3 - 6 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:** We would request funding for all phases of the project. Since it is in the concept phase, we would seek assistance in exploring viable alternatives for a project that will comply with IRWMP goals.

**Do youhave cost estimates?** No

| | |
|---|---|
| **Total Estimated Cost:** | |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | |
| **Total project costs currently unfunded:** | |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *33* **Title** *Poe Colonia Wastewater Treatment Plant Upgrade*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | Upgrade or replace entire wastewater treatment plant. Portions susceptible to damage or in need of replacement include underground tanks, drip basins, leach lines and associated lines, pumps and electric system. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# State RMS and Preferences

*Poe Colonia Wastewater Treatment Plant Upgrade*

*Project ID* 33

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | Yes |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Holtville Water Distribution System Project***

*Project ID* *34*

Sponsoring Agency City of Holtville

Participating Agencies Environmental Protection Agency/Border Environmental Cooperation Commission

### *Project Contact Information*

Contact: Justina G. Arce Title: City Planner

Email: justina@theholtgroup.net Phone No: (760) 337-3883

Mailing Address: 121 W. 5th Street, Holtville CA 92250

*Project Location* The proposed project is located immediately north of the City Limit Boundary, within the adopted Sphere of Influence and unincorporated area of Imperial County. The project area encompasses an approximate 263 acres, at a distance of two blocks north from

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Quality Goal, Objective 3: Support disadvantaged and other communities in meeting drinking water standards.The project will contribute to Objective 3 of the Water Quality Goal. The project will provide potable water services and adequate fire safety protection to an area located immediately north of the Holtville City Limits that contains 96 households that do not have access to these services. Water contamination is vulnerable in this un-served area as the residences utilize raw water from the open channel network as a domestic water source and no backflow protection is present and leaks from the lines can go undetected. The project will help meet the requirements of the Department of Public Health and accommodate the needs of the 96 households.a. Define local and regional opportunities, evaluate economies of scale and where cost effective, develop capital facilities.The proposed project is indeed a regional project in that the project will provide services for an unincorporated area of Imperial County. Specifically, the project will extend water distribution lines to serve 96 connections in the unincorporated area of Imperial County. The purpose of the project is to extend the City's Water Distribution system to provide a potable water supply and adequate fire services to this un-served population.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* 1. City General Plan- The proposed project is consistent with the City General Plan Land Use Element, Provisions of Public Services Goal 5, Policy 5.3: "Support, enforce, and conform with air and water quality standards." The project would extent the City's Water Distribution system to provide a potable water supply and adequate fire flow for this un-served population consistent with the California Department of Health requirements.

Are sponsors sought? No

## *Project Summary*

The project consists of providing potable water services to an area located immediately north of the Holtville City Limits that contains 96 households that do not have access to potable water services nor adequate fire safety protection. The project would extend the City's Water Distribution system to provide a potable water supply and adequate fire flow for this un-served population and project area. The major new components of this proposed project include: the construction of 14,900 lineal feet of domestic water pipelines ranging from 8-inch diameter to 12-inch diameter to serve the project area; designing and constructing a pipeline network to accommodate fire flow within the project area; and installing 47 new fire hydrants. The minimum water pipeline diameter size along sections where the water distribution system is looped is 12 inches.

## *Project Purpose and Need*

_x000D_The purpose of this project is to provide potable water services and adequate fire safety protection to an area located immediately north of the Holtville City Limits that contains 96 units that do not have access to these services. The majority of the residences are located outside the City Limits, but within the City's Service Area and Sphere of Influence as adopted by LAFCo. The un-served residences utilize raw water from the open channel network as a domestic water source. In addition, there are dozens of homes north of Ninth Street that that have connected to potable water services outside of the adopted development standards. These domestic water service lines run through one of the open channel canals. Debris is snagged and a variety of plant life grows on these lines. This situation was found to be vulnerable to contamination at these locations since no backflow protection is present and leaks from the lines can go undetected. A letter dated September 27, 2007 was issued to the City by the State Department of Public Health in regards to these issues. If funded, the proposed project would remedy some of these conditions since the water mains would be placed appropriately along City and County roads for proper potable water service delivery. Fire protection in the area is also currently deficient. The fire departments currently obtain water from open channel IID canals for fire fighting. The installation of the 47 fire hydrants would eliminate this safety risk.

## *Additional Information*

The City of Holtville applied for grant funding through the Border Environmental Cooperation Commission (BECC) in October 2008 to extend the Water Distribution System to the un-served area. Subsequently, in June 2009, the City was notified by BECC that the project was selected for EPA's US-Mexico Border Program Technical Assistance Funding. The City had to withdraw the project due to lack of funding but as soon as funding is committed for the 50% cost of design, BECC is willing to reconsider the project.

# Imperial IRWMP

## *Project Benefits*

ID 34 **Title** *Holtville Water Distribution System Project*

| | |
|---|---|
| **Water Supply Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | Yes |

*Explanation:* The project will include a Storm Water Pollution & Prevention Plan (SWPPP) during construction and Best Management Practices (BMPs) for site drainage and erosion control during the project construction period.

| | |
|---|---|
| **Demand Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Ecosystem Restoration/Management I** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* The project removes a barrier to planned growth by providing potable water services and adequate fire safety protection to an area located immediately north of the Holtville City Limits that contains 96 units that do not have access to these services. There are a total of 17 empty lots accounting for over 27.4 acres in the subject area that could result in potential development from the availability of water services.

**Other Benefits:**

*Explanation:* The project will comply with the Department of Public Health standards by providing potable water and adequate fire services to the 96 un-served households, which is equivalent to 336 persons (based on average of 3.5 persons per household).

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 34 **Title** *Holtville Water Distribution System Project*

***Project Schedule Information***

**Status:** Preliminary Design

**Commencement:** < 1 Year

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** No funding is needed for environmental work. The City in coordination with BECC completed the NEPA Environmental Information Document and CEQA Mitigated Negative Declaration in June 2010. A Notice of Determination was filed on September 3, 2010 for CEQA. EPA is the lead agency for NEPA. The City will need funding for 100% of the Design Costs, which are estimated at $179,112. Additional costs, including construction, construction engineering, and potential right of way costs are estimated at $2,860,888. The City needs grant funding for the entire $3,040,000 at this time.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $3,040,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $3,040,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *34* **Title** *Holtville Water Distribution System Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | 1. NEPA Environmental Information Document prepared by The Holt Group in June 2010.2. CEQA Mitigated Negative Declaration prepared by The Holt Group in June 2010.3. Preliminary Engineering Report- The City prepared a Preliminary Engineering Report in May 2010. The report identifies the existing condition and proposed improvements. |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | The City has already completed the Environmental Review and Study for the project and held one public hearing during the environmental review of the project, which resulted in a Mitigated Negative Declaration for CEQA and a Finding of No Significant Impact for NEPA. The NEPA Environmental Information Document and CEQA MND was completed in June 2010. A Notice of Determination for CEQA was filed on September 3, 2010. |
| Does the project have a plan and schedule to complete the environmental review? | Yes |
| *Explanation* | Not applicable, the environmental review has been completed. |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | The City will work with the City Engineer to acquire the necessary permits. |
| Is there a plan and schedule to complete permitting process? | Yes |
| *Explanation* | All pending ministerial and encroachment permits are scheduled to be obtained during the construction phase of the project. |

# State RMS and Preferences

*Holtville Water Distribution System Project*

*Project ID* 34

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Holtville Wastewater Treatment Plant Improvement Project***

*Project ID* *35*

Sponsoring Agency City of Holtville

Participating Agencies Environmental Protection Agency/Border Environmental Cooperation Commission and Clean Water State Revolving Loan Fund Program

### *Project Contact Information*

Contact: Justina G. Arce Title: City Planner

Email: justina@theholtgroup.net Phone No: (760) 337-3883

Mailing Address: 121 W. 5th Street, Holtville CA 92250

### *Project Location* 1250 West Kamm Road in Holtville

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Quality Goal, Objective 2: Support disadvantaged and other communities in meeting wastewater disposal and permit requirements.The project will contribute to Objective 2 of the Water Quality Goal. The City of Holtville is classified as a severely disadvantaged community with a median household income of less than 60% of the State's median household income (MHI). The current sewer rates constitute 1.6% of the MHI. The community is in direct need of grant subsidies and unable to support new debt. The project will help meet the wastewater disposal and permit requirements of the Holtville community. The upgrade of the WWTP will allow the City to comply with the demands of the Regional Water Quality Control Board. a. Define local and regional opportunities, evaluate economies of scale and where cost effective, develop capital facilities for wastewater reuse/reclamation.The City of Holtville is isolated and there's no opportunity for consolidation. The nearest wastewater treatment plant to the Holtville Wastewater Treatment Plant is 11.0 miles away.This is not an expansion project. The purpose of the project is to upgrade the plant to meet the RWQCB compliance demands. b. Match Water Quality to appropriate uses and supply treated wastewater to extend use of Colorado River supplies.The noncompliant wastewater impacts regional water bodies such as the Pear Drain (Imperial Valley Drains), Alamo River, and the Salton Sea and are not in accordance to the Clean Water Act. Treated wastewater discharges to the Salton Sea, which is a regional natural resource for the area. Without the proposed project, the City of Holtville is not able to comply with the requirements of the California Regional Water Quality Control Board, which may affect the Salton Sea which is a regional resource.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* 1. City General Plan- The proposed project is consistent with the City General Plan

Conservation/Open Space Element, Water Supply and Quality Goal 4, Policy 4.4: "Ensure the quality of waste water going from Holtville's Treatment Facility meets all treatment standards".2. City Service Area Plan- The Service Area Plan documents the planned wastewater treatment plant improvement project under section 4.9.1, Infrastructure Needs or Deficiencies, Wastewater Treatment Facilities.3. City Capital Improvement Program (2010)- The Capital Improvement List documents the City's plan to improve the Wastewater Treatment Plant to comply with all NPDES and other permitting requirements for wastewater to protect public health, safety and the environment.4. NPDES Permit No. CA0104361 and Cease and Desist Order No. R7-2009-0061 by the California Regional Water Quality Control Board.

Are sponsors sought? No

## *Project Summary*

The Holtville Wastewater Treatment Plant is out of compliance with the NPDES permit and is under a Cease and Desist Board Order. The project will rehabilitate the WWTP to meet the requirements of the California Regional Water Quality Control Board. The existing City of Holtville Wastewater Treatment Plant is a secondary treatment facility and has an average flow capacity of .85 million gallons/day (mgd). The major new components of this proposed project include (i.) rehabilitation of 50-year old headworks structure; (ii.) installation of new automatic barscreen; (iii.) rehabilitation of existing trickling filter; (iv.) rehabilitation of existing primary clarifiers; (v.) rehabilitation of existing secondary clarifiers; (vi.) replacement of 50-year old electrical system; (vii.) expansion and rehabilitation of the existing aerobic digester; (viii.) rehabilitation of the secondary effluent pump station; (ix.) installation of the biological chip reactor (BCR) ammonia removal plant. Construction would occur at the current Holtville Wastewater Treatment Plant site which is City-owned property.

## *Project Purpose and Need*

The purpose of this project is to bring the Wastewater Treatment Plant into compliance with the RWQCB as it currently has a Cease and Desist Order. The Wastewater Treatment Plant discharges into the Pear Drain, a tributary to the Alamo River, a United States body of water. The current wastewater treatment plant is out of compliance with the existing NPDES permit issued by the Regional Water Quality Control Board. The City has experienced effluent quality problems, including toxicity and priority pollutant violations. The City will need to upgrade the existing treatment plant for these reasons and because the EPA has adopted more stringent monitoring and discharge requirements. The new discharge requirement, specifically the effluent ammonia concentration limit, is the most significant driver of the plant expansion and upgrading project. The Plant failed to meet the final effluent ammonia concentration limits established by the RWQCB and will be unable to comply without this project._x000D__x000D_The City of Holtville is a small rural community. The total population of the incorporated City is 5,939 according to the 2010 US Census. The City of Holtville has a relatively low income population and is classified as severely disadvantaged. Available statistics from the 2005-2009 American Community Survey provide a quick glance of the economic conditions: the median household income for Holtville residents is estimated at $36,071.00, well below the State median income of $60,392.00 (at 59.7%) An estimated 25.9% of the population is below poverty level. The community cannot afford a rate increase._x000D_

## *Additional Information*

The project has been pre-selected by the Border Environmental Cooperation Commission (BECC) for prioritization. The City held a meeting with BECC on July 13, 2011 to discuss the selected project and that the application for the Wastewater Treatment Plant Improvement Project was being considered for funding. Project Development Assistance Program (PDAP) funding would cover up to 50% of design costs. Funding is still needed for the additional 50% of design costs and all of the construction costs.

# *Project Benefits*

ID 35 **Title** *Holtville Wastewater Treatment Plant Improvement Project*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* The project will incorporate Best Management Practices (BMP) during the construction phase. This will include a Storm Water Pollution and Prevention Plan (SWPPP).

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management I** Yes

*Explanation:* Without the rehabilitation of the WWTP, the City will be unable to meet the effluent discharge standards for acute aquatic, effluent ammonia and E-Coli concentration limits permitted, placing at risk one of the Region's most valuable natural resources, Salton Sea Natural habitat. The noncompliant wastewater discharges into water bodies such as the Pear Drain (Imperial Valley Drains), Alamo River, and the Salton Sea, and is endangering species. The WWTP non-compliant wastewater effluent discharge quality exceeds the acute aquatic standards, currently impacting the Fathead Minnow. The Fathead Minnow is quite tolerant of turbid, low-oxygenated water, and can be found in muddy ponds and streams that might otherwise be inhospitable to other species of fish. The fact that the current effluent discharge is at toxic levels for even this species is concerning for other fish and wildlife affected by the Pear Drain water body. The proposed project will help protect the environment and will not result in any adverse impact to agricultural resources as this is not a growth inducing project.

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The preferred alternative does incorporate energy saving components. The savings amount at this time is undetermined.

**Economic Development Benefits** Yes

*Explanation:* The project removes a barrier to planned growth by ensuring compliance with RWQCB permit requirements and Water Quality Control Plan. If the WWTP is not rehabilitation and upgraded in the near future, planned residential, commercial and/or industrial projects may be restricted and not be permitted for development due to capacity issues.As a result of operational inefficiencies, the treatment plant cannot adequately treat .85 MGD of wastewater. It is currently operating under capacity and does not meet effluent discharge requirements. The proposed project will enable the WWTP to operate at designed capacity thus allowing the City of Holtville to permit development opportunities as they arise. In addition, the project will provide up to 20 jobs during the upgrade/construction of the plant for approximately 14 months.

**Other Benefits:**

*Explanation:* The City is a severely disadvantaged community, earning less than 60% of the Statewide median income, per the State's IRWMP guidelines. The current sewer rates constitute 1.6% of the households income. The community is in direct need of grant

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 35 **Title** *Holtville Wastewater Treatment Plant Improvement Project*

***Project Schedule Information***

**Status:** Preliminary Design

**Commencement:** < 1 Year

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** The City will need funding for 50% of the Design Costs, which are estimated at $282,000 (50% of $564,000) and construction costs up to $5,585,000 as the community cannot afford a rate increase.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $6,149,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $5,867,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *35* **Title** *Holtville Wastewater Treatment Plant Improvement Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | 1. Rate Study- The City is currently in the process of preparing a wastewater rate study that will help determine the debt capacity of the community. It is expected that the wastewater rate study will be completed by September 2011. The rate study will further recommend financing mechanisms to scheduled capital improvements. 2. Preliminary Engineering Report- The City has completed a Preliminary Engineering Report drafted by Consultant Lee & Ro, Inc. The PER draft is only pending adoption by City Council scheduled for September 2011. |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | It was determined that the project is exempt from CEQA and NEPA would be pending if Federal funds are used. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | None necessary at this time. |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | The project is an approved requirement of the RWQCB per NPDES permit number CA0104361 and Cease and Desist Order.The Land Use does require a Conditional Use Permit through the County of Imperial. It is anticipated that the permit will be secured by the end of 2011. |
| Is there a plan and schedule to complete permitting process? | Yes |
| *Explanation* | It is anticipated that the Conditional Use Permit will be secured by the end of 2011. |

# State RMS and Preferences

*Holtville Wastewater Treatment Plant Improvement Project*

*Project ID* 35

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Holtville Wastewater Collection System Project***

*Project ID* *36*

Sponsoring Agency City of Holtville

Participating Agencies Environmental Protection Agency/Border Environmental Cooperation Commission and possibly the Clean Water State Revolving Loan Fund Program

### *Project Contact Information*

Contact: Justina G. Arce Title: City Planner

Email: justina@theholtgroup.net Phone No: (760) 337-3883

Mailing Address: 121 W. 5th Street, Holtville CA 92250

*Project Location* Holtville, Imperial County, California: The Sewer Outfall Main stretches approximately 3.2 miles. It extends from the intersection of Olive Avenue and Ninth Street within the incorporated City Limits to the Holtville Wastewater Treatment Plant located in

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Quality Goal, Objective 2: Support disadvantaged and other communities in meeting wastewater disposal and permit requirements.The project will contribute to Objective 2 of the Water Quality Goal as referenced above. The City of Holtville is classified as a severely disadvantaged community with a median household income of less than 60% of the State's median household income (MHI). The requested funding will support this severely disadvantaged community and prevent it from incurring more debt which the community cannot afford. The current sewer rates constitute 1.6% of the MHI. The community is in direct need of grant subsidies and unable to support any new debt. The City's Wastewater System, as a whole is operating under a Cease & Desist order. There is believe that the vitrified clay is infiltrated by other contaminants along the 3.2 mile stretch and a contributing factor regarding the inability of the Wastewater Treatment Plant to effectively meet the effluent discharge requirements of the CRWQCB. This project will help Holtville meet the disposal and permit requirements. a. Define local and regional opportunities, evaluate economies of scale and where cost effective, develop capital facilities for wastewater reuse/reclamation.Although the sanitary sewer outfall pipeline serves households in both incorporated and unincorporated areas, the City of Holtville is isolated and there's no opportunity for any additional shared facilities. The closest wastewater treatment plant facility to the City of Holtville's plant is at a distance of 11.0 miles. The purpose of the project is to repair the severely dilapidated gravity flow main and deteriorated manholes up to the location of the City's wastewater treatment plant. The project will further help prevent back up sewage for the entire Holtville Community both in incorporated areas and in un-incorporated areas. b. Match Water Quality to appropriate uses and supply treated wastewater to extend use of Colorado River supplies.The sole purpose of the sanitary sewer pipeline is to safely convey raw wastewater to a treated facility.

## *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* 1. City General Plan- The proposed project is consistent with the City General Plan Conservation/Open Space Element, Water Supply and Quality Goal 4, Policy 4.4: "Ensure the quality of waste water going from Holtville's Treatment Facility meets all treatment standards". The Wastewater Collection System Project, which is interrelated with the Wastewater Treatment Plant Project, supports this goal as it currently contributes to poor water quality of effluent discharge.2. City Service Area Plan- The Service Area Plan documents the planned sanitary sewer outfall main pipeline improvement project under section 4.9.1, Infrastructure Needs or Deficiencies, Wastewater Collection System. 3. City Capital Improvement Program List (2010)- The City's Capital Improvement Project List documents the Wastewater Collection System Improvement Project.

Are sponsors sought? No

## *Project Summary*

The project consists on replacing 3.2 miles of the sanitary sewer outfall main serving the Holtville Community. The existing Sewer Outfall Main consists of a 15-inch and 18-inch diameter gravity vitrified clay pipeline sections that extend from the intersection of Olive Avenue and Ninth Street to the Holtville Wastewater Treatment Plant (WWTP). The existing Wastewater Collection System Outfall Main Pipeline is over 80 years old and in extremely poor condition, unsalvageable and has reached the end of its life expectancy. The proposed Project will replace the City's deteriorated Outfall Main Pipeline, which is chronically substandard. A new 18-inch diameter PVC outfall pipeline will replace all the existing deficient pipeline segments. It will provide a constant slope from the intersection of Olive Avenue and Ninth Street to a new manhole located immediately upstream of the existing Wastewater Treatment Plant, and termination point. This pipeline serves all households within the City limits and some located outside in the immediate project vicinity. There are a total of 1,928 households hooked up to the City sanitary sewer service, thus benefitting from the proposed project.

## *Project Purpose and Need*

_x000D_The purpose of this project is to repair an inadequate and severely dilapidated gravity flow main, which is the sole feeding pipeline of raw sewage from the Holtville Community to the interrelated Holtville Wastewater Treatment Plant Improvement Project. The Outfall Main Pipeline is in extremely poor condition, unsalvageable and has reached the end of its life expectancy. The 3-foot clay pipe segments of the pipeline are constructed at below minimum slopes and do not provide a minimum scour velocity of 2 percent. A portion of the pipe segment slopes are relatively steep, while other pipeline segment slopes are flat. Others have reverse flow. There is further risk of infiltration from the existing water table and agricultural canals and fields. The existing sanitary sewer outfall pipeline, which is made of vitrified clay, is placed adjacent to concrete-lined and earth-lined raw water supply laterals. The project will repair an inadequate and severely dilapidated gravity flow main. The existing manholes are so deteriorated that they constantly collapse. A total collapse could result in the potential of back-up sewage for the entire community and could result in severe injury or death to vehicular traffic within State Highway 115, and degradation of water quality in surrounding areas._x000D__x000D_The City of Holtville is a small rural community and in dire need of a grant subsidy. The total population of the City is 5,939 according to the 2010 US Census. The City has a relatively low income population and is classified as severely disadvantaged. Available statistics from the 2005-2009 American Community Survey provide a quick glance of the economic conditions: the median household income for Holtville residents is estimated at $36,071.00, well below the State median income of $60,392.00 at 59.7%. An estimated 25.9% of the population is below poverty level. The community cannot afford additional debt or a rate increase. Current sewer rates constitute 1.6% of the Median Household Income._x000D_

## *Additional Information*

The City of Holtville applied for grant funding through the Border Environmental Cooperation Commission (BECC) in October 2008 to improve the Sanitary Sewer Outfall Main Pipeline. Subsequently,

in June 2009, the City was notified by BECC that the project was selected for EPA's US-Mexico Border Program Technical Assistance Funding. This award included funding for a Preliminary Engineering Report (PER) and Environmental Information Document (EID) and CEQA Environmental Assessment at 100%, which are complete. BECC is also funding 50% of the design costs. The City has contracted with a Consultant, Webb & Associates, to provide professional design services for the City of Holtville Wastewater Collection System. The project design is scheduled to occur between June 21, 2011 and January 1, 2012. Funding is still needed for 50% design costs and construction costs and may resort to short term bonds until a grant source is committed.The City has initiated a Public Participation Process to accomplish community understanding of the benefits and requirements of the project and the potential impacts of the project on the City of Holtville and sanitary sewer service users.

# Imperial IRWMP

## *Project Benefits*

ID 36 **Title** *Holtville Wastewater Collection System Project*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* The project will include a Storm Water Pollution & Prevention Plan (SWPPP) during construction and Best Management Practices (BMPs) as contained within the improvement plans for site drainage and erosion control during the project construction period.

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management I** No

*Explanation:*

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The Design Plans and Specifications (Contract Documents) are being prepared to include sustainable development, referred to as "green" building practices. The entire 3.2 mile project will operate via gravity flow and does not require costly lift stations or power to run them.

**Economic Development Benefits** Yes

*Explanation:* The project removes a barrier to planned growth by ensuring that the gravity flow main, which is the sole feeding pipeline of raw sewage from the Holtville community to the Wastewater Treatment Plant, operates properly and the deteriorated manholes that are the backbone of the City's entire collection system do not collapse. A total collapse could result in the potential of back-up sewage for the entire community and planned development would not be allowed. In addition, the Wastewater Collection System project will provide up to 15 jobs during the upgrade of the outfall main and manholes.

**Other Benefits:**

*Explanation:* The City is a severely disadvantaged community, earning less than 60% of the Statewide median income, per the State's IRWMP guidelines. The current sewer rates constitute 1.6% of the households income and a grant subsidy would result in a financial benefit to a minimum of 1,928 households. The community as a whole is in direct need of grant subsidies and unable to support any new debt.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 36 **Title** *Holtville Wastewater Collection System Project*

***Project Schedule Information***

**Status:** Final Design

**Commencement:** < 1 Year

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:** No funding is needed for environmental work. The City in coordination with BECC completed the NEPA Environmental Information Document and CEQA Mitigated Negative Declaration in June 2010. A Notice of Determination was filed on September 3, 2010 for CEQA. EPA is the lead agency for NEPA. The City will need funding for 50% of the Design Costs, which are estimated at $191,000 (50% of $382,000). BECC has committed to $191,000 in design costs. Additional costs, including construction, construction engineering, and potential right of way costs are estimated at $3,909,000. The City needs grant funding for the entire $3.9 Million, at this time, due to the community not being able to afford new debt.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $4,100,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $3,909,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *36* **Title** *Holtville Wastewater Collection System Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | 1. Preliminary Engineering Report- The City prepared a first Preliminary Engineering Report in 2005. The City has a final Preliminary Engineering Report (Analysis of Sanitary Sewer Outfall Pipeline) that was prepared in May 2010. The report identifies the existing condition and proposed improvements. 2. Design Plans- The City and BECC have contracted with a Consultant, Webb & Associates to provide professional design services for the City of Holtville Wastewater Collection System. The project design is scheduled to be completed between June 21, 2011 and January 1, 2012. The City has been unable to secure the remaining 50% of Design Costs.3. Sewer Rate Study- The City is currently in the process of preparing a wastewater sewer rate study that will review capacity fees and development impact fees for all planned future capital improvements, including the Wastewater Collection System Project. It is expected that the wastewater rate study will be completed by September 2011. |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | The City has already completed the Environmental Review and Study for the project and held one public hearing during the environmental review of the project, which resulted in a Mitigated Negative Declaration for CEQA and a Finding of No Significant Impact for NEPA. The NEPA Environmental Information Document and CEQA MND was completed in June 2010. A Notice of Determination for CEQA was filed on September 3, 2010. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | Not applicable, the environmental review has been completed. |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | The City has an active NPDES permit for the Wastewater Treatment Plant. The Wastewater Collection System project is interrelated with the Wastewater Treatment Plant Project and in accordance with the NPDES Permit and Cease and Desist order by the Regional Water Quality Control Board. All other required permits are ministerial and not subject to slow the project. |
| Is there a plan and schedule to complete permitting process? | Yes |
| *Explanation* | All pending ministerial and encroachment permits are scheduled to be obtained during the construction phase of the project. |

# State RMS and Preferences

*Holtville Wastewater Collection System Project*

*Project ID* 36

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Holtville UV Transmittance Water Treatment System Project***

*Project ID* *37*

Sponsoring Agency City of Holtville

Participating Agencies California Emergency Management Agency and Federal Emergency Management Agency

### *Project Contact Information*


Contact: Justina G. Arce Title: City Planner

Email: justina@theholtgroup.net Phone No: (760) 337-3883

Mailing Address: 121 W. 5th Street, Holtville CA 92250


### *Project Location* Holtville, Imperial County, California: 181 East 4th Street

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Quality Goal, Objective 3: Support disadvantaged and other communities in meeting drinking water standards.The project will contribute to Objective 3 of the Water Quality Goal. The City of Holtville is classified as a severely disadvantaged community with a median household income of less than 60% of the State's median household income (MHI). The current water rates constitute 1.5% of the MHI. The community is in direct need of grant subsidies and unable to support new debt to acquire a UV Transmittance Water Treatment System and bring the water tank and treatment system into compliance. The installation of the UV Transmittance Water Treatment System for the water tank will help meet the drinking water standards in compliance with the requirements of the California Department of Public Health and provide safe drinking water to over 1,696 households. a. Define local and regional opportunities, evaluate economies of scale and where cost effective, develop capital facilities.The City of Holtville is isolated and there's no opportunity for water treatment facility consolidation with any other entities. The nearest water treatment facility to the City of Holtville is at a distance of 12.7 miles in the City of El Centro. This is not an expansion project. The purpose of the project is to install a UV Transmittance Water Treatment System to meet the compliance demands of the California Department of Public Health.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* 1. City General Plan- The proposed project is consistent with the City General Plan Land Use Element, Provisions of Public Services Goal 5, Policy 5.3: "Support, enforce, and conform with air and water quality standards."2. California Department of Public Health Citation No. 05-14-11C-014 issued on July 25, 2011.

Are sponsors sought? No

## *Project Summary*

The City of Holtville lost a 1.5 million gallon water storage tank during the April 4, 2010 Earthquake and needs to replace the tank, inclusive of upgrading treatment system of stored water to meet new compliance standards. The City of Holtville must comply with the drinking water standards for total trihalomethanes (TTHM) Maximum Contaminant Level (MCL) as set forth by the California Department of Public Health, Chapter 4 of the California Safe Drinking Water Act. CalEMA and FEMA are replacing the water tank, but funding is needed to meet the TTHM requirements via an Ultra Violet Transmittance Water Treatment System. In order to bring the water tank into compliance, the project will include the purchase and installation of an Ultra Violet Transmittance Water Treatment System. The major new components of this proposed project include: a) installing piping, fittings, valves, transition couplings and concrete; b) installing 12 inch flow meter transmitter, power circuitry and signal; c) installing two 12 inch diameter ultraviolet reactors with control panel; d) installing UV transmittance meter with continuous flow through ultraviolet reactor; and e) installing electrical control circuitry for turbidity. The new tank and UV Transmittance Water Treatment System must have California Health Department third party validation.

## *Project Purpose and Need*

_x000D_The purpose of this project is to provide safe drinking water to the Holtville Community in compliance with the California Department of Public Health. The California Department of Public Health issued Citation No. 05-14-11C-014 on July 25, 2011 to the City for not being in compliance with total trihalomethanes (TTHM) Maximum Contaminant Level (MCL) through the past year. The project will install a UV Transmittance Water Treatment System to service the Water Tank and meet the compliance demands of the California Department of Public Health. _x000D__x000D_The City of Holtville is a small rural community. The Water Tank in conjunction with the Water Treatment Plant, provide water services to a population of 5,939 according to the 2010 US Census, with approximately 1,489 service connections. The City of Holtville has a relatively low income population and is classified as severely disadvantaged. Available statistics from the 2005-2009 American Community Survey provide a quick glance of the economic conditions: the median household income for Holtville residents is estimated at $36,071.00, well below the State median income of $60,392.00 (at 59.7%). An estimated 25.9% of the population is below poverty level. The community cannot afford a water rate increase._x000D_

## *Additional Information*

The UV Transmittance Water Treatment System project is interrelated with the replacement of the City's Water Tank as they will both assist in bringing potable water into compliance with the California Department of Public Health. Timing is of essence as the Water Tank Replacement Project funded through CalEMA and FEMA is on a schedule to be completed by October 2012.

# Imperial IRWMP

## *Project Benefits*

ID 37 **Title** *Holtville UV Transmittance Water Treatment System Project*

| | |
|---|---|
| **Water Supply Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Ecosystem Restoration/Management F** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* The project removes a barrier to planned growth by ensuring compliance with the California Department of Public Health. If the UV Transmittance Water Treatment System is not integrated to the Water Tank in the near future, planned residential, commercial and/or industrial projects may be restricted and not be permitted for development due to TTHM exceeding the Maximum Contaminant Levels.

**Other Benefits:**

*Explanation:* The City is a severely disadvantaged community, earning less than 60% of the Statewide median income, per the State's IRWMP guidelines. The current water rates constitutes 1.5% of the households income. The community is in direct need of grant subsidies and unable to support new debt. A grant subsidy will assist over 1,696 households.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 37 **Title** *Holtville UV Transmittance Water Treatment System Project*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** < 1 Year

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:** The City will need 100% funding for the purchase, installation, support equipment, and construction modifications of the UV Transmittance Water Treatment System, which are estimated at $370,000, as the community cannot afford a rate increase. All costs associated with the design, bidding and construction management related to the UV Transmittance Water Treatment System project will be incorporated into the Federal Emergency Management Agency (FEMA) water tank replacement project.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $540,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $370,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *37* **Title** *Holtville UV Transmittance Water Treatment System Project*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | California Department of Public Health Citation No. 05-14-11C-014 issued on July 25, 2011 documents needs and requirement of project. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | The project is exempt from CEQA, and NEPA. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | Not applicable |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | The project does not require any permits. |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | Not applicable |

# State RMS and Preferences

*Holtville UV Transmittance Water Treatment System Project*

*Project ID* 37

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Holtville Stormwater Master Plan Project***

*Project ID* *38*

Sponsoring Agency City of Holtville

Participating Agencies None at this time

### *Project Contact Information*

Contact: Justina G. Arce Title: City Planner

Email: justina@theholtgroup.net Phone No: (760) 337-3883

Mailing Address: 121 W. 5th Street, Holtville CA 92250

### *Project Location* City of Holtville (city-wide)

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Flood Protection and Stormwater Management Goal, Objective 3: Evaluate and define local and regional projects that prevent or minimize flooding and damage to public and private facilities and property.The project will contribute to Objective 3 of the Flood Protection and Stormwater Management Goal. The project will develop a Stormwater Master Plan for the City of Holtville, that will provide recommendations on addressing existing stormwater system deficiencies, policies, activities, and programs to address existing and future conflicts between flooding and development. The plan will also help prevent or minimize flooding and damage to property in the community by identifying high risk areas. The Plan will assist the community in proper planned development and help mitigate both the short-term and long-term risks due to storm-water flooding in the community. Environmental Protection and Enhancement Goal, Objective 1: Recognize and mitigate impacts to IID drains, small natural floodways, and the New or Alamo Rivers that could result from reduced flows as a result of development or reclaimed water use.Storm-water flows naturally toward the Alamo River which traverses the City of Holtville along the south-western portion of town. Identification of high risk flooding areas will help local leaders plan for catch basins and retention basins and proper handling of storm-water prior to discharging into the Alamo River. The plan will also help preserve and enhance valuable natural resources, as the Alamo River is a tributary to the Salton Sea.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* 1. City General Plan- The proposed project is consistent with the City Safety Element, Safety Goal 1, Policy 1.4: ".Protect the community from flooding hazards by providing and maintaining drainage facilities and limiting development within the flood-prone areas." The Stormwater Master Plan project will establish a plan that will identify and plan for existing and future conflicts between flooding and development, and preserve and enhance valuable natural

resources, including stream and floodplain systems.2. City of Holtville Development Impact Fee Nexus Study- The Nexus Study supports the need for a Stormwater Master Plan under section 6, Storm Drain System. “As development occurs, additional drainage facilities will be required to protect against flood damage. Once completed, the improvements will benefit the City’s existing population as well as new development.” 3. City of Holtville Service Area Plan- The Service Area Plan supports the need for a Stormwater Master Plan due to future demand facilities under section 4.7, Drainage, sub-section 4.7.1, Year 2020 Demand Facilities and Personnel. “Future development within the SOI areas will require drainage facilities to be installed prior to occupancy of commercial, industrial, or residential development in order to protect against flood damage. The development of the SOI areas will require drainage improvements to be installed at the time of development. These improvements must be adequate to accommodate urban flood control management.”

Are sponsors sought? No

## *Project Summary*

The project consists of preparing a Stormwater Master Plan for the City of Holtville that will provide a comprehensive plan on the existing stormwater conveyance conditions and identification of need for improvements. The City currently does not have a Stormwater Master Plan. The end product will provide the City of Holtville an overview of existing conditions, problem areas, and incorporate recommendations on required improvements and mitigation necessary for the existing stormwater conveyance systems. The plan will address and identify existing system deficiencies, projected growth-related requirements, and the requirements of State and federal regulations. The Plan should assess the need for new infrastructure to accommodate infill or future growth.The scope of services associated with this project includes: hydrologic and hydraulic modeling analysis; preparation of engineering standards to be used in developing alternatives; preparation of project costs; development of improvement programs; summary of regulations impacting the Stormwater Management Plan; and a description of the physical characteristics of the study area. Additional items include recommending policies for addressing the major issues that impact stormwater management within the City; presenting deficiencies in the conveyance system; identifying problem areas; recommending project and activities to address deficiencies and to protect water quality and natural resources in the area.

## *Project Purpose and Need*

_x000D_The purpose of this project is to prepare a Stormwater Master Plan for the City of Holtville that will provide recommendations on addressing existing stormwater system deficiencies, projected growth-related requirements, and the requirements of State and federal regulatory agencies. The comprehensive plan will also recommend policies, activities, and programs to improve water quality, address existing and future conflicts between flooding and development, and preserve and enhance the Alamo River, which is a natural resource and tributary to the Salton Sea. The City’s surface water drainage system has developed as one of the necessary components of infrastructure required to support City growth and vitality. The City's drainage system needs a comprehensive plan to convey surface runoff, to drain low areas, and to prevent flooding. _x000D__x000D_The City of Holtville is a small rural community and in dire need of a grant subsidy. The total population of the City is 5,939 according to the 2010 US Census. The City of Holtville has a relatively low income population and is classified as severely disadvantaged. Available statistics from the 2005-2009 American Community Survey provide a quick glance of the economic conditions: the median household income for Holtville residents is estimated at $36,071.00, well below the State median income of $60,392.00 (at 59.7%). An estimated 25.9% of the population is below poverty level. The community cannot afford additional debt to cover the costs of preparing a Stormwater Master Plan. _x000D_

## *Additional Information*

The Stormwater Master Plan update project is interrelated with the Stormwater Conveyance System and Retention Basin project, as they will both assist in planning for and improving the stormwater flow to mitigate any potential adverse impacts that may result from storm-water events. The plan will also help enhance and protect the Alamo River, which is a tributary to the Salton Sea, by identifying tributary urban run-off areas and planning for treatment prior to proper discharge.

# Imperial IRWMP

## *Project Benefits*

ID 38 **Title** *Holtville Stormwater Master Plan Project*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* The project will develop flood protection and stormwater management strategies to protect property from flooding. There are a number of low laying areas throughout the Holtville community that are adversely impacted during storm events. Several areas would be under devastating conditions if a 100 year storm event were to occur, resulting in significant property damage or loss. It is important to identify all of these areas and plan for them accordingly, inclusive of identifying short term mitigation measures. By further maintaining a natural stormwater flow, wherever feasible, treated stormwater may be adequately conveyed into the Alamo River, which is a tributary to the Salton Sea and thus may enhance and protect natural resources.

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management I** Yes

*Explanation:* The Stormwater Master Plan will recommend policies, guidelines, and activities to preserve and enhance valuable natural resources, such as the Alamo River, which is a natural resource and a tributary to the Salton Sea. By encouraging and maintaining a natural storm-water flow towards the Alamo River and catching and treating storm-water in very low lying areas prior to adequately conveying the storm water into the Alamo River, a properly implemented plan may result in mutual benefit to the Holtville Community, the Alamo River, and ultimately the Salton Sea.

**Public Access Benefits:** Yes

*Explanation:* There are wetlands planned for along the Alamo River. A properly implemented storm-water plan that contributes treated storm-water into the Alamo River could result in a mutual benefit to recreation areas not just limited to wetlands along the Alamo River, but also includes the Salton Sea.

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** Yes

*Explanation:* A stormwater master plan enables management to assess the stormwater capacity for demand from new development and removes any barriers to planned growth. The Sotrmwater Master Plan will ensure that planned residential, commercial and/or industrial projects are adequately protected from property damage or loss which would otherwise adversely impact economic development.

**Other Benefits:**

*Explanation:* The City is a severely disadvantaged community, earning less than 60% of the Statewide median income, per the State's IRWMP guidelines. The community as a whole is in direct need of grant subsidies and unable to support new debt. A grant subsidy would result in a financial benefit to the community at large. The plan will also help preserve and enhance valuable natural resources, such as the Alamo River,

which is a tributary to the Salton Sea by identifying high risk flooding areas that will help local leaders plan for catch basins and retention basins and proper handling of storm-water prior to discharging into the Alamo River.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 38 **Title** *Holtville Stormwater Master Plan Project*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** < 1 Year

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:** The City will need funding to hire the services of a Consultant to update the City's Water Master Plan and develop a Water Distribution System Map. The costs are estimated at $60,000. The City needs grant funding due to the community not being able to afford new debt. A Stormwater Master Plan is a useful resource that documents the infrastructure needs to potential funding agencies.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $60,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $60,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *38* **Title** *Holtville Stormwater Master Plan Project*

Are there project technical reports and documentation? Yes

*Explanation* 1. Drainage Study Report- The City has a Drainage Study Report for the Area South of 3rd Street and East of Walnut prepared by Waddell Engineering, Inc in December 2000. The purpose of the study was to determine what elevation the finished floors of habitable building areas should be constructed to protect them from inundation during significant rain storms; and to recommend improvements that should be made to the existing storm drain facilities that hand study area drainage and provide a cost estimate of constructing the same.2. Rancho Mira Vista Hydrology Study- The City has a Hydrology Study for the City of Holtville Rancho Mira Vista that was prepared by The Hot Group in July 2007. The purpose of the hydrology study was to assess the tributary areas contributing storm-water to a 33 acre area located at the northwest portion of the City. The Study further recommends on-site and off-site storm-water conveyance system improvements, inclusive of a regional retention basis, and cost estimates to construct the same. 3. Storm-Water Pollution Prevention Plan for Alamo River- The City has a Storm-Water Pollution Prevention Plan for a segment of the Alamo River, south east of the City of Holtville, that provides best management practices for pollution prevention, reduction of sedimentation, and erosion prevention. The SWPPP was prepared by The Holt Group in May 2010.

Is environmental documentation for the project complete? Yes

*Explanation* Exempt

Does the project have a plan and schedule to complete the environmental review? No

*Explanation* Not applicable

Does the project have necessary permits and regulatory approval? Yes

*Explanation* Ministerial

Is there a plan and schedule to complete permitting process? No

*Explanation* Not applicable

# State RMS and Preferences

*Holtville Stormwater Master Plan Project*

*Project ID* 38

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Holtville Stormwater Conveyance System and Detention Basin Project***

*Project ID* *39*

Sponsoring Agency City of Holtville

Participating Agencies None at this time

### *Project Contact Information*

Contact: Justina G. Arce Title: City Planner

Email: justina@theholtgroup.net Phone No: (760) 337-3883

Mailing Address: 121 W. 5th Street, Holtville CA 92250

*Project Location* Northwest section of town at corner of Ninth Street (Alamo Road) and Melon Avenue within the City of Holtville and southeast section of town (Third Street between Walnut Avenue and Chestnut Avenue to South of Rose Street to East between Chestnut Avenue t

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Flood Protection and Stormwater Management Goal, Objective 3: Evaluate and define local and regional projects that prevent or minimize flooding and damage to public and private facilities and property.The project will contribute to Objective 3 of the Flood Protection and Stormwater Management Goal. The project will improve the existing storm-water conveyance system deficiencies to prevent flooding and property damage to the Holtville Community that may result from any future storm event.Environmental Protection and Enhancement Goal, Objective 1: Recognize and mitigate impacts to IID drains, small natural floodways, and the New or Alamo Rivers that could result from reduced flows as a result of development or reclaimed water use.Storm-water flows naturally toward the Alamo River which traverses the City of Holtville along the south-western portion of town. The project will provide for the proper handling of storm-water prior to discharging into the Alamo River and help preserve and enhance this valuable natural resource, which is a tributary to the Salton Sea. Additionally, potential discharge areas are within close proximity to planned Wetlands along the Alamo River.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* 1. City General Plan- The proposed project is consistent with the City Safety Element, Safety Goal 1, Policy 1.4: ".Protect the community from flooding hazards by providing and maintaining drainage facilities and limiting development within the flood-prone areas." The project will address existing and future conflicts between flooding and development, and preserve and enhance valuable natural resources, including stream and floodplain systems.2. City of Holtville Service Area Plan- The Service Area Plan supports the need

incursions). The Southwestern section of town would require the construction of a regional detention basin to control and treat storm-water run-off prior to discharging into the Alamo River._x000D__x000D_The City of Holtville is a small rural community and in dire need of a grant subsidy. The total population of the City is 5,939 according to the 2010 US Census. The City of Holtville has a relatively low income population and is classified as severely disadvantaged. Available statistics from the 2005-2009 American Community Survey provide a quick glance of the economic conditions: the median household income for Holtville residents is estimated at $36,071.00, well below the State median income of $60,392.00 (at 59.7%). An estimated 25.9% of the population is below poverty level. The community cannot afford additional debt to cover the costs of improving the existing Storm-water Conveyance System. _x000D_

### *Additional Information*

The Stormwater Conveyance System and Retention Basin project is interrelated with the Stormwater Master Plan update project, as they will both assist in planning for and improving the storm-water flow to mitigate any potential adverse impacts that may result from storm-water events. The project will also help enhance and protect the Alamo River, which is a tributary to the Salton Sea by, providing proper handling of storm-water prior to discharging into the Alamo River.

# *Project Benefits*

ID 39 **Title** *Holtville Stormwater Conveyance System and Detention Basin Project*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* The project will develop flood protection and storm-water management strategies to protect property from flooding. The project areas include low laying areas in the City that could be adversely impacted during major storm events. The project areas would be under devastating conditions if a 100 year storm event were to occur, resulting in significant property damage or loss. It is important to plan for the areas accordingly and maintain a natural storm-water flow, so that treated storm-water may be adequately conveyed into the Alamo River, which is a tributary to the Salton Sea and thus may further enhance and protect natural resources.

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management I** Yes

*Explanation:* The projects will help preserve and protect valuable natural resources such as the Alamo River, which is a tributary to the Salton Sea. By encouraging and maintaining a natural storm-water flow towards the Alamo River and catching and treating storm-water in very low lying areas prior to adequately conveying the storm water into the Alamo River, properly implemented projects may result in mutual benefit to the Holtville Community, the Alamo River, and ultimately the Salton Sea. Additionally, potential discharge areas are within close proximity to planned Wetlands along the Alamo River offering a benefit to these future developments.

**Public Access Benefits:** Yes

*Explanation:* There are wetlands planned for along the Alamo River. Properly implemented storm-water projects that contribute treated storm-water into the Alamo River could result in a mutual benefit to recreation areas not just limited to wetlands along the Alamo River, but also includes the Salton Sea. Additionally, the retention basin planned for the southwestern portion of town will protect a planned recreational trail from erosion caused by storm-water.

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** Yes

*Explanation:* The projects would increase storm-water flow capabilities and catch and treat storm-water in very low lying areas prior to adequately conveying the storm water into the Alamo River, facilitating infill development and removing any barriers to planned growth in this area.

**Other Benefits:**

*Explanation:* The City is a severely disadvantaged community, earning less than 60% of the Statewide median income, per the State's IRWMP guidelines. The community as a whole is in direct need of grant subsidies and unable to support new debt. A grant subsidy would result in a financial benefit to the community at large. The project

will also help preserve and enhance valuable natural resources, such as the Alamo River, which is tributary to the Salton Sea, while preventing flooding and damage to property. The project will also provide proper handling of storm-water prior to discharging into the Alamo River.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 39 **Title** *Holtville Stormwater Conveyance System and Detention Basin Project*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** < 1 Year

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** The City will need funding for the construction of a storm-water conveyance system, retention basin, and pump stations that will service 90% of the City of Holtville. The total costs are estimated at $7,095,000 (6,700,000 northwest + $320,000 southeast + $75,000 southwestern section). The City needs grant funding due to the community not being able to afford new debt.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $7,095,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $7,095,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *39* **Title** *Holtville Stormwater Conveyance System and Detention Basin Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | 1. Drainage Study Report (Southeastern Section of Town)- The City has a Drainage Study Report for the Area South of 3rd Street and East of Walnut prepared by Waddell Engineering, Inc in December 2000. The purpose of the study was to determine what elevation the finished floors of habitable building areas should be constructed to protect them from inundation during significant rain storms; and to recommend improvements that should be made to the existing storm drain facilities that hand study area drainage and provide a cost estimate of constructing the same.2. Northwestern (Rancho Mira Vista) Hydrology Study- The City has a Hydrology Study for the City of Holtville Rancho Mira Vista area that was prepared by The Hot Group in July 2007. The purpose of the hydrology study was to recommend on-site and off-site storm-water conveyance system improvements and cost estimates for the Rancho Mira Vista Subdivision. 3. Storm-Water Pollution Prevention Plan for Alamo River- The City has a Storm-Water Pollution Prevention Plan for a segment of the Alamo River, southwest of the City of Holtville, that provides best management practices for pollution prevention, reduction of sedimentation, and erosion prevention. The SWPPP was prepared by The Holt Group in May 2010. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | Yes |
| *Explanation* | The City will work with the City Planner to complete the required environmental review. |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | No, City will need to obtain proper discharge permits. |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | TBD Based on Funding |

# State RMS and Preferences

*Holtville Stormwater Conveyance System and Detention Basin Project*

*Project ID* 39

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | Yes |
| Urban Runoff Management | Yes |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Holtville Sewer Master Plan/Map Update Project***

*Project ID* *40*

Sponsoring Agency City of Holtville

Participating Agencies None at this time

### *Project Contact Information*

Contact: Justina G. Arce Title: City Planner

Email: justina@theholtgroup.net Phone No: (760) 337-3883

Mailing Address: 121 W. 5th Street, Holtville CA 92250

### *Project Location* City of Holtville (city-wide)

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Quality Goal, Objective 2: Support disadvantaged and other communities in meeting wastewater disposal and permit requirements.The project will contribute to Objective 2 of the Water Quality Goal. The City of Holtville is classified as a severely disadvantaged community with a median household income of less than 60% of the State's median household income (MHI). The current sewer rates constitute 1.6% of the MHI. The community is in direct need of grant subsidies and unable to support new debt. The project will update the City of Holtville's Sewer Master Plan, which will include a condition assessment of the existing sewer collection, pumping, and treatment facilities to properly address the wastewater systems deficiencies and to identify and locate sewer collection lines throughout the community and assess their size and condition for proper planning and wastewater transmission and disposal without any adverse impacts to the environment. The Sewer Master Plan and Map will help meet the wastewater disposal requirements of the Holtville community. a. Define local and regional opportunities, evaluate economies of scale and where cost effective, develop capital facilities for wastewater reuse/reclamation.The proposed project will address an overview of the sewer facilities at the Barbara Worth Country which are owned by Imperial County, but transmitted to the Holtville Wastewater Treatment Plant for treatment prior to discharge. The purpose of the project is to develop a comprehensive plan for the improvement of the City's wastewater infrastructure inclusive of evaluation of services provided to other entities in order to meet both the short-term and long-term needs of the Holtville Community. b. Match Water Quality to appropriate uses and supply treated wastewater to extend use of Colorado River supplies.The Sewer Master Plan will establish a plan for conveyance of all wastewater that will be generated within the City and surrounding service areas from point of origin to the City's Wastewater Treatment Plant. Without the Sewer Master Plan update, the City of Holtville will not be able to properly identify and assess the wastewater collection systems needs and water treatment demands and plan for their Improvement in a matter that ensures compliance with the requirements of the California Regional Water Quality Control Board.

## *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* 1. City General Plan- The proposed project is generally consistent with the City General Plan Conservation/Open Space Element, Water Supply and Quality Goal 4, Policy 4.4: "Ensure the quality of waste water going from Holtville's Treatment Facility meets all treatment standards". The Sewer Master Plan update project will establish a plan for conveyance of all wastewater that will be generated within the Holtville Service area to the City's Wastewater Treatment Plant.2. City of Holtville Service Area Plan- The Service Area Plan documents the need for a Sewer Master Plan update under section 3.0, Growth Projections and Phasing, sub-section 3.2, Phasing. "Actual development may defer, which emphasizes the need for periodic updates to plans such as the sewer and water master plans. Plan updates will incorporate the actual location and magnitude of new development, predict future growth, and re-evaluate facility and service requirements."

Are sponsors sought? No

## *Project Summary*

The project consists of updating the City of Holtville's 1998 Sewer Master Plan and developing a map of the sanitary sewer collection system. The current sewer collection map is a Mylar copy developed in 1990 that has not been updated since then. The end product will provide the City of Holtville with a current comprehensive map and plan of the City's sanitary sewer infrastructure for the adequate maintenance and repair of its wastewater infrastructure to meet both the short-term and long-term growth of the Holtville Community. Periodic updates to the Sewer Master Plan are recommended as updates will incorporate the actual location, condition and infrastructure needs, and reevaluate facility and service requirements.The scope of services associated with this project include: conducting a hydraulic evaluation and condition assessment of the existing sewer collection, pumping, and treatment facilities; the development of a prioritized capital improvement program; creating an electronic AutoCad map of the existing infrastructure collection system; and the documentation of the master planning elements as a component of the City's forthcoming Service Area Plan. Additional services include developing basic planning/design data and sewage demand forecast and developing and evaluating improvement alternatives.

## *Project Purpose and Need*

_x000D_The purpose of this project is to update the City of Holtville's 1998 Sewer Master Plan and develop a map of the sanitary sewer collection system. The current sewer collection system map is a Mylar copy developed in 1990 that has not been updated since then. The end product will provide the City of Holtville with a current comprehensive map and plan of the City's sanitary sewer infrastructure for the adequate maintenance and repair of its wastewater infrastructure to meet both the short-term and long-term growth of the Holtville Community. Another major purpose of this Sewer Master Plan is to evaluate capacity of the existing collection and conveyance system to convey flows without backups of wastewater into homes and businesses and without sanitary sewer overflows. The proposed Sewer Master Plan will conduct a hydraulic evaluation and condition assessment of the existing sewer collection, pumping, and treatment facilities, as well as assess the condition and adequacy of the sewer transmission lines serving the community._x000D__x000D_The City of Holtville is a small rural community and in dire need of a grant subsidy. The total population of the City is 5,939 according to the 2010 US Census. The City has a relatively low income population and is classified as severely disadvantaged. Available statistics from the 2005-2009 American Community Survey provide a quick glance of the economic conditions: the median household income for Holtville residents is estimated at $36,071.00, well below the State median income of $60,392.00 at 59.7%. An estimated 25.9% of the population is below poverty level. The community cannot afford additional debt or a rate increase. Current sewer rates constitute 1.6% of the Median Household Income._x000D_

## *Additional Information*

The Sewer Master Plan update project is interrelated with the Wastewater Outfall Main Collection System project and Wastewater Treatment Plant Project, as it will assist the City in complying with the demands of the Regional Water Quality Control Board and contribute to correcting the poor water quality of effluent

# Imperial IRWMP

## *Project Benefits*

ID 40 **Title** *Holtville Sewer Master Plan/Map Update Project*

| | |
|---|---|
| **Water Supply Benefits** | No |
| *Explanation:* | |
| **Flood Protection/Stormwater Management Benefits** | No |
| *Explanation:* | |
| **Demand Management Benefits** | No |
| *Explanation:* | |
| **Ecosystem Restoration/Management F** | No |
| *Explanation:* | |
| **Public Access Benefits:** | No |
| *Explanation:* | |
| **Power Cost Savings or Production Benefits** | No |
| *Explanation:* | |
| **Economic Development Benefits** | No |
| *Explanation:* | |
| **Other Benefits:** | |

*Explanation:* The City is a severely disadvantaged community, earning less than 60% of the Statewide median income, per the State's IRWMP guidelines. The current sewer rates constitute 1.6% of the households income and a grant subsidy would result in a financial benefit to the community at large. The community as a whole is in direct need of grant subsidies and unable to support any new debt.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 40 **Title** *Holtville Sewer Master Plan/Map Update Project*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** < 1 Year

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:** The City will need funding to hire the services of a Consultant to update the City's Sewer Master Plan and develop a Sanitary Sewer Collection System Map. The costs are estimated at $84,000. The City needs grant funding due to the community not being able to afford new debt.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $84,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $84,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *40* **Title** *Holtville Sewer Master Plan/Map Update Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | The City has the following report that may assist with the analysis phase of the sewer system and update of the Sewer Master Plan: 1. 1990 Mylar of the City of Holtville Sanitary Sewer Collection System. |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | Exempt |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | Not applicable |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | Ministerial |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | Not applicable |

# State RMS and Preferences

*Holtville Sewer Master Plan/Map Update Project*

*Project ID* 40

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Drainage Improvements in the Township of Seeley; County Project No. 5363***

*Project ID* 41

Sponsoring Agency: Imperial County Public Works

Participating Agencies: Imperial County Public Works, City of Calexico, City of El Centro, City of Imperial, & IID

### *Project Contact Information*

Contact: Codie Rowin  Title: Administrative Analyst I

Email: codierowin@co.imperial.ca.us  Phone No: (760) 482-4462

Mailing Address: 155 South 11th Street, El Centro, CA 92243

### *Project Location*

Approximately 8 miles west of the City of El Centro; 1.5 miles north of Interstate 8 and east of the New River (See attached location map)

### *Project Goals and Type*

Goals: Multiple

Type: Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | Yes |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* The project will minimize standing water that creates vector control problems. It will reduce hazards, for vehicles and pedestrians, caused by deep water collecting in the streets and shoulders. It will prevent economic loss for the Seeley Union School District, caused by student absences on rainy days.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* The project is consistent with the Seeley Area Drainage Master Plan created in June of 2010; and the Imperial County Flood Management Plan adopted in February of 2007. The project is included in the Seeley Area plan as a part of priority number one (1) in the table of recommended drainage improvements in Appendix D of the Capital Improvement Program portion of the plan. The Imperial County Flood Management Plan, on page 16 states that Seeley is included in the Urban area designation of the Imperial County Land Use Plan; and on Page 33 lists the community of Seeley as located in Colorado River Watershed Region 7.

Are sponsors sought? No

### *Project Summary*

Construction of drainage infrastructure to convey storm water discharge, including the installation of approximately 1,600 feet of 84 inch diameter storm drain pipe, clearing and grubbing, curb inlets, cleanouts, installation of Class II base, environmental clearance, engineering and design.

### *Project Purpose and Need*

The community of Seeley currently has a minimum number of engineered drainage structures. Storm run-off

and flow are conveyed into the community any time there is even a minor storm event, creating health and safety hazards for Seeley residents. Flooding issues have been a problem for the community for years; however the severe winter storms of the past few years have caused more than the usual hardships, including an increase in the need for mosquito abatement, and deterioration of the roads. The Superintendent of the Seeley Elementary School has expressed concern for the safety of the students, as well as economic costs to the school district when students stay home because of rain. Storm water collects in the streets and the unpaved sides of the roads, on which many of them walk to school. Children who walk to school during or after rain events often walk in the roadway, in the line of traffic, to avoid walking in the water and mud at the side of the road. The school places wooden pallets across the roads for children to cross the street, causing additional hazards for the children.

### *Additional Information*

Imperial County has applied for funds through FEMA's Hazard Mitigation Grant Program (HMGP) for DR-1911 for this project. Should the funds be awarded by FEMA, the County would request the required non-federal match (25%) be funded through this Prop 1E application.

# Imperial IRWMP

## *Project Benefits*

ID 41 **Title** *Drainage Improvements in the Township of Seeley; County Project No. 5363*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** Yes

*Explanation:* The benefits of drainage improvements in Seeley will include cost savings in terms of vector control and road repairs, as well as lost revenue to the school district because of rain-related student absences. The project could also reduce the risk of injury or death, caused by flood related accidents, thereby reducing potential liability for such events. A recent benefit cost analysis (BCA) prepared for a FEMA Hazard Mitigation Grant application, provided a benefit cost ratio of 1.78. The BCA calculated the cost of the project of $1,916,794, when weighed with the benefits (losses avoided over the 50 year project useful life) of $3,415,257, which shows this is a beneficial cost-effective project. The BCA is attached to this Project Information Form.

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management B** No

*Explanation:*

**Public Access Benefits:** Yes

*Explanation:* The project will provide public access benefits, in that it will prevent deterioration of the roads; and will ensure that roads do not need to close following rain events. The project will make it possible for children to attend school in safety during/after rain events, and the school district will not suffer a loss of revenue because of high student absence rates.

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** Yes

*Explanation:* The project will help the Seeley Union School District to claim the maximum possible revenues related to student daily attendance. Currently on rainy days, and often on the days following, student absences cost the School an average of $2,563 per day in lost revenue. Even a few rainy days per year, result in a significant loss for this small school district.

**Other Benefits:**

*Explanation:* The project will reduce hazard effects and risks by draining stormwater away from Seeley streets. Benefits will include reduced liability risks to the County; reduction in costs of road repairs and vector control; and reduction in student absences which will prevent lost revenue for the school district.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 41 **Title** *Drainage Improvements in the Township of Seeley; County Project No. 5363*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** 1 - 3 Years

**Completion:** 1 - 3 Years

***Project Funding Information***

**Funding Needs:** If Hazard Mitigation Grant Program funds are approved, the County will request Prop 1b funds for the 25% non-federal match.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $1,916,794 |
| **Total of planned local funding (cost match):** | $239,599 |
| **Total of other non-state or federal funding:** | $1,437,596 |
| **Total project costs currently unfunded:** | $239,599 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** Yes

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *41* **Title** *Drainage Improvements in the Township of Seeley; County Project No. 5363*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | Project description; environmental questionnaire; benefit-cost analysis report; and Seeley Area Drainage Master Plan, all of which are a part of the Hazard Mitigation Grant Program (HMGP) application submitted under FEMA's DR-1911. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | However, an environmental questionnaire has been prepared for FEMA's Hazard Mitigation Grant Program (HMGP). |
| Does the project have a plan and schedule to complete the environmental review? | Yes |
| *Explanation* | Environmental studies will be performed concurrently with design process once funds are approved. |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | The County will obtain the required permits that will likely be required by the US Army Corps of Engineers and the Department of Fish & Game. |
| Is there a plan and schedule to complete permitting process? | Yes |
| *Explanation* | The permitting process will be performed in conjunction with the environmental studies. |

# State RMS and Preferences

*Drainage Improvements in the Township of Seeley; County Project No. 5363*

*Project ID* 41

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | Yes |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | Yes |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | Yes |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| No | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| Yes | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Phased Underrun Storage and Agricultural Wastewater Reclamation Project***

*Project ID* *42*

Sponsoring Agency Imperial Irrigation District

Participating Agencies Imperial Irrigation District, Sephton Water Technology, Inc.

### *Project Contact Information*


Contact: Scott D. Harding Title: Energy Resource Planner, Sr.

Email: sharding@iidenergy.com Phone No: (760) 482-3365

Mailing Address: 333 East Barioni Blvd., Imperial, CA 92251-0937


### *Project Location* East half of Imperial Valley

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | No | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* The project concept will significantly help meet future demands (Water Supply Objective 1) by supplying at least 5,600 AF per year of power plant cooling water in the near term and at least 17,000 AF per year in the longer term. This will be new supply from a mix of reclaimed wastewater and IID underrun stored in East Mesa with no adverse impact to existing users in the region nor any significant negative impacts to existing waterways. The quantity of new supply is only limited by the amount of underrun water that IID can capture from the Colorado River in East Mesa. That upper underrun limit is estimated at 55,000 AF per year. That would allow up to 52,000 AF/yr. of new supply (Water Supply Objective 2) through this project concept.Costs of underrun storage and delivery through drains would be equitably shared by industrial end users paying the cost of untreated water delivery (Water Supply Objective 3). The cost of water treatment for power plant cooling at the point of use would be borne by the generator. The cost of thermal energy for desalination by salt gradient solar ponds and brine storage will be borne by the generator, which benefits from the brine concentrate. If distilled water is supplied directly to municipal or industrial users, they will bear the capital and operating cost of the desalination equipment and delivery system through water tariffs. If distilled water is blended with groundwater or drain water and supplied to nearby agriculture in lieu of Colorado River water, that farmer will pay only the irrigation water tariff. An industrial user elsewhere taking the in lieu Colorado river water will pay the cost of groundwater development, desalination, and blending.An essential component of the project is phased development of groundwater resources in East Mesa with banking of underruns delivered from the Coachella canal. This development helps optimize and sustain Colorado River entitlements (Water Supply Objective 4a) by capturing water that would be lost in underrun years. The other essential component of the project is reclamation of agricultural wastewater from drains and the Salton Sea for local reuse in industry and agriculture. This conserves tile and tail water and puts it to reasonable beneficial use (Water Supply Objective 4b) in addition to putting groundwater and stored underrun water to beneficial use.The project diversifies the regional water supply portfolio by integrating several resource management strategies (Water Supply Objective 5) including desalination of

brackish groundwater, drain water, and reclaiming waste water from the Salton Sea for desalination and reuse of both the water and the salt. Economic development is promoted by supplying reclaimed water for use in power plant cooling, agriculture, other industries, or in municipalities. The provision of power plant cooling water in particular is consistent with the Imperial County General Plan.The project proposes to develop new groundwater sources in locations far removed from existing groundwater users thus protecting correlative groundwater rights (Water Supply Objective 6). Groundwater drawn will be recharged with Colorado River underrun in years when it's available, thus preventing overdraft of any aquifers.The longer term implementation of the project will produce very high quality distilled water from the Salton Sea or other local sources, which can be supplied to nearby municipalities such as Niland and Calipatria. Both are disadvantaged communities that may benefit from a high quality water supply if it can be delivered cost effectively (Water Quality Objective 3).Groundwater delivered through the drains is likely to meet TMDL standards more easily than much of the existing agricultural drain water and will be monitored to ensure compliance (Water Quality Objective 4). Pumping of groundwater will stop during major rain events so as not to exacerbate impacts from storm water.Colorado River underrun water is higher quality than East Mesa groundwater. Pumping existing water from the East Mesa aquifer for use and recharging with underrun water is expected to gradually improve the groundwater quality in the East Mesa (Water Quality Objective 5).The project prevents reduction of flow impact to drains by pumping groundwater into each affected drain upstream of the point where water is drawn for power plant cooling or agricultural blending in the same overall amount (Environmental Protection and Enhancement Objective 1). Drain flows peak during certain crop cycles and rainstorms. Pumping of groundwater into drains will stop or be greatly reduced during peak drain flow periods by automatic monitoring of flow in the drain. The total flow in drains used for groundwater distribution will increase and be less variable than in unused drains. This can offset some impacts from QSA reductions and from some other projects. If a benefit can be demonstrated, there may be an opportunity provide mitigation for the impacts of other projects on drain flows (Environmental Protection and Enhancement Objective 2). While outside the scope of IRWMP planning, some other projects may have adverse impacts on the Salton Sea by reducing flow and increasing the concentration of salts and nutrients in drains and rivers. This concern has been a stumbling block for at least one local municipal water recycling project. The long term implementation of the project proposed here will use salt gradient solar ponds to directly mitigate such impacts by reducing salt loading in the Salton Sea by up to 400,000 tons annually, reducing nutrient loading, and preventing salt dust impacts from playa by permanently covering thousands of acres of playa with solar energy collection ponds and structures. This could be used to mitigate the impact that other projects may have on the Salton Sea if needed.In the long term, reclaimed waste water from this project can be made available to support aquatic wildlife habitat areas at the North end of the Imperial region with recreational uses such as fishing and bird watching (Environmental Protection and Enhancement Objective 3).The overall project concept will require evaluation of each implementation for cost effectiveness and technical feasibility and negotiation of equitable cost sharing agreements between IID, water users, and water treatment providers (Regional Policy Goals Objective 2). The project will require coordination between IID, Imperial County, any cities that may be end users, the BLM and the Bureau of Reclamation (Regional Policy Goals Objective 3). Interagency coordination on this project should contribute to development of a consistent policy.The project is not expected to have negative impacts on the nearby disadvantaged communities (Regional Policy Goals Objective 5). The project may provide a benefit if the high quality distilled water produced can be cost effectively delivered to those communities. Over time, the project will provide several dozen permanent professional jobs for local residents plus a few hundred temporary construction jobs. In a region with unemployment ranging between 25% and 30%, this matters to disadvantaged communities.

*Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation* The proposed project should be consistent with the Imperial County General Plan with respect to providing water for geothermal development and County jurisdiction over groundwater. Other local, State, and Federal planning documents will have to be studied. State planning documents that affect the Salton Sea are up for review at this time and may change.

Are sponsors sought? Yes

## *Project Summary*

Store underrun water as East Mesa groundwater by siphoning from the lined Coachella Canal to sections of the old unlined Coachella Canal East of the area of recovery. Puncture the clay bottom of the unlined Coachella Canal prior to filling to allow underrun water to recharge the groundwater. Drill wells and pump groundwater into specific IID drains with available capacity that lead from East Mesa to the point of use. Treat recovered groundwater/drain water at the point of use to meet end user requirements. As a near term example, draw cooling water from one or more drains near a geothermal power plant and treat specifically to meet cooling water standards. For binary geothermal plants use drain water treated by ultrafiltration blended with distilled cooling tower blowdown to meet specific cooling water quality standards at a competitive cost. Maintain the water supply by pumping water stored in East Mesa at the rate needed to sustain the rate of flow in the drain needed by the power plant with zero net loss of historical drain flow. As a long term example, supply untreated groundwater stored in East Mesa to blending stations at canals near the shore of the Salton Sea via specific IID drains or spills. Desalinate water from the Salton Sea at salt gradient solar generating ponds on the exposed playa. These ponds will use salts concentrated from the Salton Sea to capture and store solar energy as heat. The heat will be converted to electricity by Organic Rankine Cycle Engines to pay the cost of the ponds, generating equipment, and the long term playa dust control they provide. Use thermal energy below the optimum electrical generating range to distill water reclaimed from the Salton Sea. Replace the desalinated seawater with extra underrun to East Mesa groundwater. Excess subsurface water will gradually flow to the Salton Sea. Blend the distilled water with East Mesa groundwater/drain water at blending stations adjacent to irrigation canals in the vicinity of the Salton Sea. Use blended product water for agriculture near the Sea to free up canal water for industrial use further south in the Imperial Valley as an in lieu exchange. Use the salt brine concentrate to supply new salt gradient solar ponds. This provides an environmental benefit by removing excess salts and nutrients from the Sea with no net loss of water and preserves flow in the affected drains. Alternatively, distilled water can be delivered with minimal blending to nearby geothermal power plants or communities such as Niland or Calipatria.

## *Project Purpose and Need*

The Imperial region faces a long term water supply/demand deficit on the order of 100,000 AF per year or more. In the near term there are at least two binary geothermal plants planned that have been delayed due, at least in part, to the high cost of new industrial water supply, now priced with a $551.22 development fee for the amounts needed by the plants. The economy of the Imperial region can not recover and grow unless affordable new industrial water supply can be provided. The purpose of the project conceived is to address both the near term and long term regional need for new water supply in a cost effective and environmentally benign way._x000D__x000D_In the near term, the project proposes to supply up to 11,200 AF/yr total or 5,600 AF/yr of cooling water makeup at each of two locations (Wister and East Brawley). A binary geothermal plant has been planned, but not yet built at each location. Absent this project these plants would be supplied out of a fixed 25,000 AF/yr new industrial allocation from the regular Colorado River entitlement. Rather than draw from the existing Colorado River source, this project proposes to develop untapped East Mesa groundwater resources near each location, deliver the groundwater via a major IID drain near each geothermal plant location, and treat the groundwater/drain water at the plant to meet cooling water standards. East Mesa groundwater would be recharged from underrun delivered through the Coachella Canal and the old unlined Coachella Canal at Iris Wash, then pumped from wells near Iris Wash and delivered to the Wister plant via the Z drain. Recharge for the East Brawley plant would be near 33deg 00min latitude, N115deg 12min longitude with wells further west and delivery via Magnolia Drain to a pipeline near the Alamo River leading to the plant. The geothermal operator or a water treatment company can be responsible for the intake and treatment operation so that IID only needs to invest in East Mesa groundwater development, recharge infrastructure, and delivery management via existing drains. The total water cost

including treatment is estimated to range between $323/AF and $418/AF at the Wister plant and between $323/AF and $551/AF at the East Brawley location. See the attached Water Cost Estimate spreadsheets for details. The cost range is dependent on the level of treatment needed, which depends on the quality of East Mesa groundwater at each location. The quality will not be known until test wells can be drilled. In any case, the development cost will be equal or less than what's now being billed to new industrial users._x000D__x000D_Sale of East Mesa groundwater to the geothermal plants will help finance development of underrun storage and groundwater development at East Mesa. This model can be implemented in other locations on the east side of the Imperial Valley on a scale of 5,000 to 6,000 AF/yr with a capital investment of less than $20 million for each project. In addition to reducing demands on normal Colorado river supplies, development of East Mesa groundwater serves a water security purpose. This groundwater will continue to be available to the region even if there's an interruption in Colorado River supplies due to a major earthquake or other disaster._x000D__x000D_While a portion of the long term water supply/demand imbalance can be addressed by new industrial users such as geothermal power plants hosting treatment facilities on site to reclaim brackish groundwater and drain water, this will not be feasible or cost effective for all users. Desalination facilities that supply multiple users will be needed in the longer term to fully offset the deficit of supply. There is very little new water supply in the region that does not require treatment or blending with cleaner water before use._x000D__x000D_The use of salt gradient solar ponds on the Salton Sea playa is one of the strategies under consideration by IID for long term control of salt dust from the playa as the Salton Sea recedes. These ponds have a substantial solar energy generating potential proven by demonstrations in other regions. If a planned demonstration in the Imperial Valley is successful, the ponds would provide a self funding dust solution and a source of renewable energy to meet renewable portfolio requirements for IID or other utilities._x000D__x000D_The ponds need thousands of tons of concentrated salt brine to capture and hold solar energy. The most abundant local source is the Salton Sea, which would benefit environmentally from removal of salts as the salinity is rising and will continue past the point of ecological collapse absent any large scale salt extraction. Removal of salts by conventional evaporation ponds would only accelerate the damage to the Salton Sea. _x000D_For this reason, a practical implementation of salt gradient solar ponds in the Imperial region would require substantial desalination capacity to extract salt from the Salton Sea while retaining the water to return to the Sea. Distillation of Salton Sea water using low grade thermal energy has been tested by a project underway for several years at a CalEnergy geothermal plant in the region. The distilled water product is of high quality and may be suitable for a wide range of local uses. Direct return of the distilled water to the Salton Sea would not be cost effective. Being very high in salinity, the Salton Sea would get nearly the same dilution benefit from an acre foot of slightly brackish groundwater or agricultural drain water as from an acre foot of distilled water. It would make economic sense to deliver the distilled water to end users or blend it for use in local agriculture in exchange for brackish water delivered to the Sea._x000D__x000D_The largest local source of brackish water that could be developed without a negative impact on other regional water users is East Mesa groundwater. East Mesa is estimated to hold in excess of 1 million acre feet of water, mostly brackish. This aquifer is nearly full and could be developed for a period of time without recharge. However, long term sustainable development would require recharge. The best source for recharge of East Mesa is the unused entitlement of Colorado River supplies in underrun years, which can only be banked with physical storage under current water rights agreements._x000D__x000D_The longer term purpose of this project is to use the desalination capacity of proposed salt gradient solar ponds to provide new water supplies for regional users by delivering distilled Salton Sea water for direct local use or blending with brackish water for agricultural use and making an in lieu exchange for Colorado River water that would be _x000D_freed up by farms using the reclaimed water. The Salton Sea would be replenished with brackish groundwater in a one for one exchange with water drawn out for distillation._x000D__x000D_Cost estimates for blended Salton Sea distillate and brackish water delivered to local agriculture in exchange for Colorado river water range from $356/AF if the brackish water blended is close to 1,000 mg/Lit. TDS. That is the best case estimate for East Mesa groundwater TDS. At the worst case East Mesa TDS estimate of 3,000 mg/Lit., the cost of blended water would be about $528/AF. See the attached cost estimate spreadsheets for details. The cost estimates are based on East Mesa brackish groundwater developed and recharged at Iris Wash and delivered through the Z Drain/Spill to the Salton Sea shore for blending with distilled Salton Sea Water and delivery to local farms or wildlife habitat. The amount estimated is 17,000 AF/yr of blended product. The limit on the amount is the capacity of the Z Drain to handle additional flows estimated at 13,000 AF/yr (see attached drain flow and capacity spreadsheets for details). In any case, the cost of blended distillate and brackish groundwater/drain water will be less than the $551/AF development fee IID charges new industrial users for quantities in that

range. The model can be replicated at other locations that can deliver brackish water to the Salton Sea up to the limit of brackish water recharge by underruns.

### *Additional Information*

The project proposed is complex and needs to executed in phases. It also will involve several innovations to tailor existing technologies to regional conditions. Therefore certain pilot tests, and groundwater evaluation studies will need to be carried out before constructing any long term infrastructure.East Mesa groundwater development needs to be more carefully evaluated with test wells and a comprehensive survey. IID has estimated the cost of evaluating East Mesa groundwater at upwards of $400,000. Focusing development on a few specific sites with limited groundwater withdrawal may reduce the near term cost of an East Mesa groundwater evaluation by limiting the scope. However a full evaluation will eventually be needed if the resource is to be extensively developed. Development of groundwater in East Mesa and recharge via the Coachella canal is likely to require legal, water rights, infrastructure use, and land use agreements between IID, Imperial County, the Coachella Valley Water District, the BLM, and the Bureau of Reclamation. These agreements will probably take time to work out. Pilot and demonstration tests can be pursued prior to the conclusion of agreements as long as there are benefits to the tests even if negotiations fail.Near term provision of drain and groundwater to new geothermal power plants for cooling use will require removal of suspended solids and microorganisms by micro-filtration or ultra-filtration. These filtration technologies are well established, however a pilot test would be needed to verify treatment of local waters to cooling water standards. Water chemistry in the drains considered for delivery should be analyzed over time to observe any variability.An ongoing pilot and demonstration test is being carried out at the CalEnergy Salton Sea Unit 1&2 geothermal power plants to refine and demonstrate a waste heat thermal desalination technology, Vertical Tube Evaporation (VTE) for conversion of Salton Sea water to potable water and brine concentrate. This project is already funded by the Bureau of Reclamation and the California Department of Water Resources (DWR) under a Prop. 50 grant and is well underway. The proposal to the DWR included limited testing of local river and brackish water sources. Data from this project indicates that it is feasible to distill Salton Sea water to a high quality product water and concentrate the salts to the near saturation brine needed by salt gradient solar ponds.The VTE technology has previously been demonstrated at three California power plants for reclamation of cooling tower blow-down using waste heat from the plant as the driving energy. This approach is proposed in this project at new local geothermal plants to convert blow-down to distilled water for blending with brackish groundwater if needed to meet cooling water quality standards.IID has moved forward on a proposal to build a 5 acre salt gradient solar pond demonstration on Salton Sea playa 1/2 mile from the VTE test site at CalEnergy Units 1&2. The intention of the salt gradient solar pond concept is to use electrical generation at peak temperatures (just below the water boiling point) to create a renewable energy revenue stream. This will pay the cost of building and operating the ponds while locking down hundreds or thousands of acres of playa dust. Salton Sea playa dust would be permanently contained under a plastic pond liner, a layer of gypsum precipitated from the Salton Sea water, and during the years of operation, by ten feet of salt water. Initial projections indicate that the ponds can pay for themselves with electric power sales. Certain innovations will be needed to tailor the salt gradient solar pond technology to conditions in the Imperial Valley such as high heat, high winds, high evaporation rates, unique brine chemistry, and a lack of available freshwater. This will require a series of tests at the demonstration pond of several strategies and innovations under consideration to meet local conditions. A budget for this aspect of the project has been drawn up and partial funding has been offered by IID. These amounts are in the budget figures.The VTE demonstration plant will concentrate the Salton Sea brine needed to fill the 5 acre demonstration pond. Provided this project moves forward, the VTE demonstration plant will later be moved to the 5 acre demonstration pond to maintain the pond gradient and demonstrate distillation of Salton Sea water using heat from the pond. A smaller VTE unit was used for the same purpose in 1985 on a 1/2 acre DWR salt gradient solar pond test at Los Banos. Reclamation of agricultural drain water in the San Joaquin Valley was the purpose of that test. Distillation using heat from a salt gradient solar pond has been shown to be several times more efficient than electric generation and can operate at a much lower temperature range.After completion of the tests and evaluations described, financing, permitting, and construction of permanent infrastructure for each aspect of the proposed project concept can proceed.

# Imperial IRWMP

## *Project Benefits*

ID 42 **Title** *Phased Underrun Storage and Agricultural Wastewater Reclamation Project*

**Water Supply Benefits** Yes

*Explanation:* In the near term, the project will provide up to 5,600 AF/yr of cooling water to two geothermal power plant sites or 11,200 AF/yr in total. In the longer term, the project can provide 17,000 AF/yr of blended distillate and brackish water to agriculture or habitat in the Wister with an in lieu exchange for Colorado River water. If East Mesa groundwater recharge by underruns can meet the high end estimate of 55,000 AF/yr, then the project could provide up to 52,000 AF/yr of total long term sustainable supply.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* The project frees up 11,200 AF/yr of Colorado River water from the 25,000 AF/yr new industrial allotment for other uses in the near term. The project has the potential to expand long term new water supply by up to 52,000 AF/yr thus reducing demand on existing Colorado River supplies.

**Ecosystem Restoration/Management I** Yes

*Explanation:* In the near term, the project will add flow to two or more specific drains, providing a small offset to expected drain flow reductions.In the long term, the salt gradient solar ponds will provide substantial ecosystem benefits by withdrawing 400,000 tons of salt or more annually from the Salton Sea, thus delaying a predicted collapse of the aquatic ecosystem and loss to fish eating birds that depend on it. Locking down playa salt dust under the ponds will provide a public health benefit by reducing blowing salt dust in high winds. This is likely to offset damage to wildlife and crops in the area as well. The distilled water generated by the salt gradient solar ponds will be free of selenium and other contaminants of concern for wildlife that are present in local surface waters. Several wildlife habitat facilities are in the project area including the Sonny Bono Salton Sea and Wister wildlife refuges with more facilities planned. The distillate can be blended with local water supplies delivered to habitat areas to bring them in compliance with standards for contaminant loading in wildlife habitat.The playa salt gradient solar pond concept under consideration by IID includes a row of aquatic habitat ponds as a wave and earthquake damage buffer between the solar ponds and the Salton Sea. These would be maintained at marine salinity with a portion of the distilled water produced from the pond operation and can support fish and other aquatic organisms.

**Public Access Benefits:** Yes

*Explanation:* To the extent that distilled water may be supplied to support wildlife habitat areas, this will facilitate bird watching and hunting already practised in those locations. A delay in the aquatic ecosystem collapse will allow fishing in the Salton Sea to continue longer although that fishery is in decline. Fishing in drains where flow is sustained by addition of brackish groundwater is likely to improve.

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The near term water treatment facilities at geothermal power plants would use low pressure, low energy demand micro-filtration or ultra-filtration to remove suspended solids and microorganisms from the brackish water. If needed, reduction in dissolved

solids would be accomplished blending with distilled water produced by reclaiming cooling tower blow-down. The blow-down distillation process would be driven by waste heat from the geothermal operation. This is more energy efficient than reverse osmosis treatment of brackish water for cooling tower makeup.The long term salt gradient solar pond concept has major renewable power production benefits. A 1981 NASA/JPL study estimated a capacity of 600MW for a large scale salt gradient solar pond implementation in the south end of the Salton Sea with competitive renewable energy costs at that time. What has changed since then is the reduction in water supply to the region, a problem which this project seeks to address. The concept envisioned in the 1980's relied on excess water supply from a then rising Salton Sea and brine concentration by conventional evaporation ponds. This project seeks to conserve water by evaporative reduction on the pond surfaces and reclamation of Salton Sea water for beneficial use with no net loss of water to the Sea or the region.

**Economic Development Benefits** Yes

*Explanation:* The near term project will facilitate the construction of at least two geothermal power plants by reducing the cost of new cooling water supply. This would provide dozens of jobs for the local economy. Several permanent professional jobs would also be created running the groundwater pumping, recharge, delivery, and treatment operations.The long term salt gradient solar pond concept would provide new water supply for various industrial projects by in lieu exchange with irrigation water allowing for more economic growth. The dust control provided will reduce damage to crops from playa salt dust aiding the agriculture industry and avoid damage to public health affecting quality of life in the region. The salt gradient solar pond operation will provide dozens of permanent professional jobs when fully implemented and hundreds of temporary construction jobs to build the ponds and water distribution infrastructure.

**Other Benefits:**

*Explanation:* The project provides a model for agricultural wastewater reclamation with local reuse, exchanges of water within the region to meet the needs of users in various locations, treatment and blending of reclaimed wastewater and new brackish groundwater to meet specific user quality standards, and an integration of environmental benefits with economic development.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 42 **Title** *Phased Underrun Storage and Agricultural Wastewater Reclamation Project*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** 1 - 3 Years

**Completion:** > 6 Years

***Project Funding Information***

**Funding Needs:** Funds are needed to match IID funds for a salt gradient solar pond demonstration on the Salton Sea playa. Funds are also needed to evaluate the water quality and capacity of the East Mesa groundwater aquifer and the cost and effectiveness of groundwater recharge.

**Do youhave cost estimates?** No

| | |
|---|---|
| **Total Estimated Cost:** | |
| **Total of planned local funding (cost match):** | |
| **Total of other non-state or federal funding:** | $880,000 |
| **Total project costs currently unfunded:** | |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *42* **Title** *Phased Underrun Storage and Agricultural Wastewater Reclamation Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | We have process flow diagrams, water cost estimates, drain flow and capacity data, and water chemistry data for specific drains, rivers, and the Salton Sea. We also have operational and chemistry data from the VTE Geothermal Desalination Pilot/Demo Project on distillation of Salton Sea water with low grade thermal energy. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | There is a tentative schedule, but it has been delayed by land use negotiations. |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | Yes |
| *Explanation* | There is a tentative schedule, but it has been delayed by land use negotiations. |

# State RMS and Preferences

*Phased Underrun Storage and Agricultural Wastewater Reclamation Project*

*Project ID* 42

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | Yes |
| Desalination: | Yes |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | Yes |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | Yes |
| Match Quality to Use | Yes |
| Pollution Prevention | No |
| Salinity Management | Yes |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | Yes |
| Water Recrecation | No |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | Yes |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Microalgal Cultivation for Improved Yields, Economic Value and Water Use Efficiency on Agricultural lands in the Imperial Valley, CA***

*Project ID* 44

Sponsoring Agency: Scripps Institution of Oceanography (SIO), University of California San Diego (UCSD)

Participating Agencies: SIO-led academic consortium will work on the project to advise as needed with potential academic collaborators including Cal Poly San Luis Obispo and academic laboratory teams affiliated with the San Diego Center for Algae Biotechnology; the SIO-led team

### *Project Contact Information*


Contact: Dominick Mendola, Ph.D. Title: Senior Engineer

Email: dominick.mendola@gmail.com Phone No: (858) 534-8947

Mailing Address: Scripps Institution of Oceanography, University of California, San Diego, 9500 Gilman Drive, Mail Code 0218, La Jolla, CA 92093-0218


### *Project Location*

Imperial Valley low productivity agricultural lands with high clay soil content with exact location to be determined based on ability to find proper agricultural lands, partner farm owners, and access to optimal infrastructure

### *Project Goals and Type*

Goals: Multiple

Type: Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | Yes |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | improved economics for agriculture operators per unit of water irrigated |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* o Water Supply 5: project integrates resources management strategies that diversify the regional water supply portfolio through matching water quality to use for degraded water supplies (potential drainage and other degraded waters that stretch water supplies for use on agricultural lands) with coordinated land use and water management policies. Discharged water quality from agricultural lands that adapt this technology will improve due to the high nutrient uptake of algae aquaculture. o Water quality 2a: the algae ponds will be able to improve water quality for wastewater reuse and reclamation if future wastewater supplies become available and are suitable for the project's productso Water quality 2b: the algae ponds can be adapted to appropriately use degraded wastewater (should such waters become available) for algae aquaculture, extending and creating beneficial use of Colorado River supplies o Water quality 4: algae aquaculture ponds using waters contributing to noncompliance with total maximum daily loads (TDMLs) established by the Colorado River Regional Quality Control Board for the Imperial Region can serve as an effective tool for reducing loads in waters throughout the agricultural areas where algae aquaculture takes place, removing water quality stressors throughout the agricultural drainage area o Environmental protection and enhancement 1: algae aquaculture can serve as an effective means to reduce overall loading in a water system, enabling the project to help recognize and mitigate impacts to IID drains, the New River, and the Alamo River that could result from reduced flows as a result of development or reclaimed water useo Regional policy goal 5:

the areas around the Salton Sea and the majority of the Imperial Valley constitute disadvantaged communities and stand to suffer disproportionally from any policy or project that reduces the quality of Salton Sea ecology; current high nutrient inflows into the Salton Sea enable algae blooms to disrupt the local ecosystem, causing massive fish and bird die-offs; upstream algae aquaculture the reduces overall nutrient loading to the Salton Sea will help reduce the intensity of future Salton Sea algae blooms.

## *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* As algae are agricultural crops and would be cultivated on existing and permitted agricultural lands using waters originally allocated to agriculture and thus, in terms of planning, would likely fall under agricultural uses in such documents. The project, in addition, is compatible with the various plans for Salton Sea Restoration (State of California, including the Species Conservation Habitat, Salton Sea Authority) and is compatible with water transfer mitigation requirements. The algae project is also compatible and possibly beneficial to the United States Fish and Wildlife (USFWS) Sonny Bono National Wildlife Refuge habitat management goals. Careful planning and location selection will ensure that interception of drainage waters is done to not negatively impact drainage species habitat.

Are sponsors sought? Yes

## *Project Summary*

This project intends to test the concept that microalgae aquaculture, a form of flood-irrigated agriculture, can present a potentially attractive future alternative for Imperial Valley growers to replace, at least partially, current forage crop farming. The demonstration project would build and operate for a period of five years to test the hypothesis for improved economic yields per unit investment and per unit water; open pond algae aquaculture utilizes a similar quantity of water to popular forage crops such as alfalfa and Sudan grass. The project would be conducted in partnership with a to-be-determined farmer who owns land with high clay content in an approved agricultural zone on which forage crops are currently being cultivated. In order to demonstrate possible benefits and water use flexibility, the project will utilize multiple water sources, including: IID-supplied freshwater, agricultural drainage water, and possibly other water sources, as permitted. The project has multiple short-term water use goals: (1) enabling water discharged from the project for conventional agriculture reuse, (2) enhancing regional drainage and receiving water quality through reductions in nutrient loading in waters, (3) matching water quality to use, and (4) freeing high-value IID freshwater supplies by making better use of local waters degraded through industrial, municipal and agricultural use. The project would install approximately 10 hectares (25 acres) of shallow clay-soil-lined raceway-type “high-rate” algae culture ponds, designed and operated to yield a protein and healthy-fat rich algal biomass on a continual, year-round basis. The harvested algae biomass would be processed to yield an animal feed supplement sold on the open market. If proper market conditions permit, part or all the extractable algae oil components will be separated from the harvested biomass for biofuel production while the residual biomass would become a component of a high-protein animal feed. Operational and economic tracking of every aspect of the algae production, harvesting and down-stream processing would be conducted by the academic consortium partners to produce publishable quality scientific papers documenting the results of the project.

## *Project Purpose and Need*

The project serves two important purposes: water quality improvement and algae aquaculture development. _x000D_o The project, through removing excess nutrient and other loads from agricultural waters ultimately fated for Salton Sea inflow, will, overtime and if scaled up through adoption by conventional growers, lower overall nutrient concentration inflows to the Salton Sea. Excessive nutrient concentrations in the Salton Sea, especially N and P, contribute to algae blooms in the lake with associated wildlife die-offs, harming the environment, conservation efforts and regional tourism in Riverside and Imperial Counties._x000D_o Algae aquaculture has the potential to provide, if scaled up and given the appropriate resources through this and other projects, (1) a sustainable, domestic and renewable liquid transportation fuel with a lower carbon

footprint than common sources, (2) sustainable, domestic and renewable gas through a digester process with a lower carbon footprint than common gas sources, (3) a high protein animal feed able to replace unsustainable fish meal, (4) a high value and nutritional human food source, and (5) an organic fertilizer. If allowed to develop, scale and flourish in Imperial Valley, algae biomass has the potential to foster economic development throughout the region, help meet regional, state and national renewable energy and fuel goals, and provide regional growers with a productive crop that has a higher value in revenue per unit water and land than conventional crops.

### *Additional Information*

Please note that we are actively seeking additional local funding (cost match) in addition to what is listed in the funding portion of this project form.

# *Project Benefits*

ID 44 **Title** *Microalgal Cultivation for Improved Yields, Economic Value and Water Use Efficiency on Agricultural lands in the Imperial Valley, CA*

**Water Supply Benefits** Yes

*Explanation:* However, yield benefits would depend on which water uses the algae aquaculture replaces and what water sources the algae aquaculture offsets through reuse of waters or use of degraded water sources.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* The project will use degraded waters as well as IID freshwater in multiple pond cycles as opposed to continuous inflows of IID freshwater; quantity of acre-feet offset will depend on final project location, design, and what freshwater-using crop the algae systems replace when scaled on conventional agricultural lands.

**Ecosystem Restoration/Management I** Yes

*Explanation:* The algae ponds will reduce nutrient and other contaminant loading in waters discharging into the local riparian systems, drainage canals, and Salton Sea, enhancing and better managing the local ecosystems.

**Public Access Benefits:** Yes

*Explanation:* The algae ponds will reduce nutrient loading in waters discharging into the Salton Sea, enhancing and better managing the recreation areas in and near the lake. In addition, the project's ponds, if the project is successful and scaled up, will have air quality benefits by acting as a dust sink, helping to mitigate air quality health risks associated with recreation and public access near the Salton Sea.

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The harvested algae biomass can be used to produce biogas for electricity and biofuel for vehicles or to run generators. Algae for biogas for electricity are a renewable energy source that can help meet renewable energy mandates. Algae produced for fertilizer can save on energy use for fertilizer production plants; however, these benefits will probably be realized out of the region, where they are produced.

**Economic Development Benefits** Yes

*Explanation:* If this project succeeds in leading the way for the growth of algae aquaculture in IV, algae systems will provide a high-value crop for the agricultural industry and a high-yielding biofuel and renewable energy source for IV's growing "green" economy. The collective impact of such algae systems could turn IV into a hub for biofuel and biotechnology while sustaining multiple agriculture, research and "green" employment and educational opportunities.

**Other Benefits:**

*Explanation:* If the final demonstration proves successful and this leads to algae systems replacing conventional agriculture field crops, the adoption of algae systems in Imperial Valley offers a high-value crop for those in local agriculture, a high-protein animal feed to support local operations, biofuel to meet California's Low Carbon Fuel Standard, biogas to contribute to IV's renewable energy portfolio, to turn IV into a hub for algal

biotechnology development, to convert unproductive high-clay soils into productive agricultural lands and possibly to act as a sink for dangerous dust from exposed Salton Sea playa.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 44 **Title** *Microalgal Cultivation for Improved Yields, Economic Value and Water Use Efficiency on Agricultural lands in the Imperial Valley, CA*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** 1 - 3 Years

**Completion:** > 6 Years

***Project Funding Information***

**Funding Needs:** Currently, project is not funded.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $3,500,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $3,500,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *44* **Title** *Microalgal Cultivation for Improved Yields, Economic Value and Water Use Efficiency on Agricultural lands in the Imperial Valley, CA*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | However, the SIO academic consortium has multiple reports and system designs on algae production systems and their benefits, but none written specifically for this project. Many of the system designs are adaptable to the Imperial Region and the scales of the project. The SIO lab leading the project is a photobiology laboratory and has access to multiple engineering, productivity and life cycle analyses studies on algal culturing systems and their associated benefits. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | However, the project will likely be able to operated as a conventional agricultural operation of the partnered farmers and growers and be able to operate under their environmental requirements. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | Please see question 32. |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | Please see question 32. |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | Please see question 32. |

# State RMS and Preferences

*Microalgal Cultivation for Improved Yields, Economic Value and Water Use Efficiency on Agricultural lands in the Imperial Valley, CA*

*Project ID* 44

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | Yes |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | Yes |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | No |
| Water Recrecation | Yes |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Macroalgae Solutions for the Imperial Valley and Salton Sea Region***

*Project ID* *45*

Sponsoring Agency The Gas Technology Institute (GTI)

Participating Agencies Heifetz BioConsulting, Scripps Institution of Oceanography (SIO), UCSD, University of Connecticut

### *Project Contact Information*


Contact: Peter B. Heifetz, Ph.D. Title: Principal, Heifetz BioConsulting

Email: pheifetz@earthlink.net Phone No: (858) 353-3630

Mailing Address: 10805 Birch Bluff Avenue, San Diego, CA 92131


### *Project Location* TBD optimal Imperial Valley locations

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | Yes |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | Increased value crops per water used |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* o Water Supply 5: project integrates resources management strategies that diversify the regional water supply portfolio through matching water quality to use for freshwater and degraded water supplies (including, but not limited to possible drainage, riparian, Salton Sea, brackish groundwater, and reclaimed wastewater) with coordinated land use and water management policies, improving discharge water quality for regional environmental enhancement and demonstrating technology that can be used upstream in Imperial Valley agricultural lands for removing water quality contaminants and for reuse of irrigation waters on conventional agriculture. This stretches supply utility since waters can be used longer on agricultural lands (as long as the use of liners and other technology prevent saline waters from contaminating the lands) due to high salt tolerance in macroalgae and due to the lowering of system evaporative water loss in closed high-humidity greenhouses. o Water supply 6: the project will be able to use, if available and feasible, brackish and saline groundwater for beneficial use.o Water quality 2a: macroalgae growth systems will be able to improve water quality for wastewater reuse and reclamation if future wastewater supplies become available.o Water quality 2b: macroalgae growth systems can be adapted to appropriately use degraded wastewater (should such waters become available) for algae aquaculture, extending and creating beneficial use of Colorado River supplies . o Water quality 4: macroalgae growth systems using waters contributing to or in noncompliance with total maximum daily loads (TDMLs) established by the Colorado River Regional Quality Control Board for the Imperial Region can serve as an effective tool for reducing loads in waters.o Environmental protection and enhancement 1: algae aquaculture can serve as an effective means to reduce overall loading in a water system, enabling the project to help recognize and mitigate impacts to IID drains, the New River, and the Alamo River that could result from reduced flows as a result of development or reclaimed water use.

## *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* While only at the conceptual stage, the project would likely be consistent with the County plans and is compatible with the various plans for Salton Sea Restoration (State of California, including the Species Conservation Habitat, Salton Sea Authority). The algae project would likely be compatible and possibly beneficial to the United States Fish and Wildlife (USFWS) Sonny Bono National Wildlife Refuge habitat management goals.

Are sponsors sought? Yes

## *Project Summary*

We propose to convert macroalgae, customarily cultivated in open aquatic systems, into a new, broadly deployable terrestrial crop suitable for farm production in the Imperial Valley (IV) using modifications of existing agricultural practices, especially greenhouses. Specifically, we plan to use tools of modern selective breeding and high-throughput genetic screening to develop strains of fast-growing macroalgae with desirable commercial properties, and demonstrate cultivation techniques that can use low-quality water and non-arable land including those subject to salt and nutrient contamination making them unsuitable for conventional agriculture. In addition, seaweed for direct human consumption offers a high-value human health food able to target the vegan, vegetarian, kosher, gluten-free and other high-value food markets. Seaweed for human consumption (and other high-value seaweed products and byproducts) offers to turn low-productive land into productive revenue-generating acreage. The proposed research and development will enable the IV agricultural use changes that are necessary to enable easy adaptation of IV lands for seaweed growth. This in turn will allow IV farmers to demonstrate a better value of crop produced for water used, to match water quality to use and, due to the ability of many seaweed types to flourish in salinities greater than those found in freshwater, to stretch water supplies through cycling-up water salinity concentrations instead of discharging straight to agricultural drains.

## *Project Purpose and Need*

The project serves two important purposes: Salton Sea inflows water quality enhancement and algae aquaculture economic development. _x000D_o The project, through removing excess nutrient and other loads from Salton Sea inflow waters will, overtime and if scaled, lower overall nutrient concentrations in riparian systems, agricultural drains and the Salton Sea compared to if agricultural lands were to maintain the status quo for water use practices. Excessive nutrient concentrations in the Salton Sea, especially N and P, contribute to algae blooms in the lake with associated wildlife die-offs, harming the environment, conservation efforts and regional tourism in Riverside and Imperial Counties._x000D_o Algae aquaculture has the potential to provide, if scaled up and given the appropriate resources through this and subsequent projects, (1) a sustainable, domestic and renewable liquid transportation fuel with a lower carbon footprint than common sources, (2) sustainable, domestic and renewable gas through a digester process with a lower carbon footprint than common gas sources, (3) high protein animal feed able to replace, at least partially, unsustainable ocean fish meal, (4) high value and nutritional human foods, including a purely vegetable source of healthful polyunsaturated fatty acids, and (5) organic fertilizer. If allowed to develop, scale and flourish in Imperial Valley, algae biomass has the potential to foster economic development throughout the region, help meet regional, state and national renewable energy and fuel goals, and provide regional growers with a productive crop that has a higher value in revenue per unit water and land than conventional crops.

## *Additional Information*

o Macroalgae (seaweeds and filamentous green, red and brown algae) can be cultivated and harvested using efficient, simple and robust techniques that are currently well-established at very large scales globally. Annual biomass yields (dry weight) range from 50 to 320 metric tons per hectare per year for closed and open systems, respectively. Coupled with their suitability for reliable inland biocontainment and established genetics this makes macroalgae a compelling choice for current and future initiatives designed to maximize biological conversion of sunlight energy and waste nutrients into food, feed and fuel/chemical products. A three-phase non-marine seaweed strategy is envisioned for California and the Imperial Valley region. Phase I, the open-system seaweed cultivation in the Salton Sea, utilizes proven conventional production technologies for upstream cultivation and downstream harvest and processing. The product stream would

include high-value sulfated polysaccharides (agar, alginate) and biomass residues with optimal feedstock characteristics for secondary bioconversion to fuels and chemicals or utilization as amino acid-balanced high protein feed supplements. Phase II, closed-system terrestrial seaweed cultivation, utilizes low-cost greenhouse systems for water and nutrient conservation and gaseous carbon fertilization via uptake of waste CO2. Optimization of seaweed biomass composition by means of genetic selection and classical breeding will enable high-value food products and ingredients for domestic and export markets that have superior nutritional value. Phase III, open/closed-system commodity-scale terrestrial seaweed cultivation, aims to adapt seaweed production to conventional field agriculture, allowing the productive use of salt-contaminated groundwater otherwise unsuitable for crop production and matching the productivity and growth advantages of seaweeds to the economies of scale enabled by modern agricultural operations. While significant R&D will be required, success in establishing such terrestrial seaweed farming systems has the potential to revolutionize agriculture in the Imperial Valley region as well as to address the scale demands of petroleum-based fuel and chemical feedstock replacement.o This project form encompasses phase II of the macroalgae initiatives.o Please note that we are actively seeking additional local funding (cost match) in addition to what is listed in the funding portion of this project form. o Species:  optimized thermotolerant seaweed strains developed through natural selection, breeding and genetics.  Rhodophyte (Gracilaria) and chlorophyte (Ulva) are best options.o Product Opportunity:  high-value sea vegetables for domestic and Asian export markets; biofuels. Market opportunity is clean, high-quality and environmentally sound and sustainable production; R&D goal is improved nutritional qualities including vitamins and essential fatty acids (omega-3, ARA, DHA);  Medium term research horizon, with near-term opportunities utilizing existing but lower-value strainso Culture Options:  low-cost greenhouse and spray-irrigation systems are under development at capital costs of $300,000–500,000 per hectare

# Imperial IRWMP

## *Project Benefits*

ID 45 **Title** *Macroalgae Solutions for the Imperial Valley and Salton Sea Region*

**Water Supply Benefits** Yes

*Explanation:* If this technology proves successful here and then is allowed for adaptation to conventional agricultural lands, reuse of agricultural runoff, drainage waters, wastewater, and saline water sources, and the recycling of waters in high-humidity greenhouses would free up freshwater supplies traditionally allocated for the land under cultivation; for example, for every 1 acre of land that has traditionally grown alfalfa, approximately 6 ac-ft per acre of IID freshwater per year will be saved from use on that land in favor of using alternative and degraded water sources. Alternatively, for example, if a closed greenhouse, through decreased net system evaporation and the reuse of waters with increasing salinity, were to utilize 1 ac-ft freshwater per year on lands traditionally used to grow alfalfa, approximately 5 ac-ft per acre per year of IID freshwater would be saved from direct use on that land.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* The project will use runoff, drainage, wastewater, and cycled saline water instead of IID freshwater; quantity of acre-feet offset will depend on final project location, design, and what freshwater-using crop the algae systems replace when scaled on conventional agricultural lands.

**Ecosystem Restoration/Management I** Yes

*Explanation:* The algae cultivation systems will reduce nutrient and other contaminant loading in waters discharging into the local riparian systems, drainage canals, and Salton Sea, enhancing and better managing the local ecosystems.

**Public Access Benefits:** Yes

*Explanation:* The macroalgae cultivation systems will reduce nutrient loading in waters discharging into the Salton Sea, enhancing and better managing the recreation areas in and near the lake. The project also supports the nearby USFWS Sonny Bono National Wildlife Refuge's mission of providing public access to outdoor recreational opportunities.

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The harvested algae biomass and post-processing residues can be used to produce biogas and biofuel. Algae for biogas for electricity are a renewable energy source that can help meet renewable energy mandates.

**Economic Development Benefits** Yes

*Explanation:* If this project succeeds in leading the way for the growth of macroalgae aquaculture in IV, seaweed algae systems will provide a high-value crop for the agricultural industry, including for human consumption, and a high-yielding biofuel and renewable energy source for IV's growing "green" economy. The collective impact of such macroalgae systems could turn IV into a hub for biofuel and biotechnology while sustaining multiple agriculture, research and "green" employment and educational opportunities.

**Other Benefits:**

*Explanation:* If the final demonstration proves successful and this leads to macroalgae systems

replacing conventional agriculture field crops on low quality lands, the adoption of macroalgae systems in Imperial Valley offers a high-value crop for those in local agriculture, a high-protein food choice to better translate water imported to the valley into value to the economy, biofuel to meet California's Low Carbon Fuel Standard, and biogas to contribute to IV's renewable energy portfolio. In addition, such a transformation will turn IV into a hub for algal development and convert unproductive high-clay soils into productive agricultural lands.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 45 **Title** *Macroalgae Solutions for the Imperial Valley and Salton Sea Region*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** 1 - 3 Years

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:** Funding is required to adapt existing selective breeding methodologies, to optimize productivity in Imperial Valley-specific environmental conditions, and to enhance yields of value-creating compositional elements including specific nutrients (such as omega-3 fatty acids and other fats/oils). The project team has already identified strains of red seaweed that are able to survive the elevated temperatures expected in the Imperial Valley. These would require further adaptation to site water conditions, as well as extensive breeding for optimal composition. Preliminary greenhouse design has been completed as part of a DOE-funded Phase One project led by GTI and including the proposed project team. This design will need to be scaled up and validated for Imperial Valley conditions.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $5,000,000 |
| **Total of planned local funding (cost match):** | $500,000 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $4,500,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *45* **Title** *Macroalgae Solutions for the Imperial Valley and Salton Sea Region*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | The GTI-led academic consortium has multiple reports and system designs on macroalgae production systems and their benefits, but only preliminary reports written specifically for this project. Many system designs are adaptable to the Imperial Region and the scales of the project. The academic team leading the project has access to multiple engineering, productivity and life cycle analyses studies on macroalgal culturing systems and their associated benefits. GTI recently completed a DOE-funded Phase One project to develop initial designs for the seaweed greenhouse facility, and the reports from that program are available. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | No. However, the project will likely be able to operated as a conventional greenhouse agricultural operation of the partnered farmers and growers and be able to operate under their environmental requirements. Additional documentation and environmental work may need to be completed based on final project locations and how degraded and cycled water use infrastructure impacts environmental quality. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | No. However, please see question 32. |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | No. However, please see question 32. |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | No. However, please see question 32. |

# State RMS and Preferences

*Macroalgae Solutions for the Imperial Valley and Salton Sea Region*

*Project ID* 45

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | Yes |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | Yes |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | No |
| Water Recrecation | Yes |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| No | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Large-Scale Microalgal Cultivation on Recently-Exposed Playa Lands for Improving Salton Sea Water Quality and Regional Air Quality***

*Project ID* *46*

Sponsoring Agency: Scripps Institution of Oceanography (SIO), University of California San Diego (UCSD)

Participating Agencies: The Imperial Irrigation District (IID). Additionally: other academic researchers from California institutions of higher learning to be chosen and led by the sponsoring agency. These academic partner and researchers will include, but not be limited to: alg

### *Project Contact Information*


Contact: Dominick Mendola, Ph.D. Title: Senior Engineer

Email: dominick.mendola@gmail.com Phone No: (858) 534-8947

Mailing Address: Scripps Institution of Oceanography, University of California, San Diego, 9500 Gilman Drive, Mail Code 0218, La Jolla, CA 92093-0218


### *Project Location*

Imperial Valley, CA on recently-exposed Salton Sea lakebed (playa). The final project location will be determined early-on during the 1-yr proposal refinement period based on a comprehensive site evaluation matrix designed to weight algae project-specific

### *Project Goals and Type*

Goals: Multiple

Type: Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | Yes |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | air quality; improved economics for agriculture operators per unit of water irrigated |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* o Water Supply 5: project integrates resources management strategies that diversify the regional water supply portfolio through matching water quality to use for degraded water supplies (including, but not limited to possible drainage, riparian, Salton Sea, brackish groundwater, reclaimed wastewater) with coordinated land use and water management policies, improving discharge water quality for regional environmental enhancement and demonstrating technology that can be used upstream in Imperial Valley agricultural lands for removing water quality contaminants for reuse of irrigation waters on conventional agriculture, stretching supply utility. o Water supply 6: the project will be able to use, if available and feasible, brackish and saline groundwater for beneficial useo Water quality 2a: the algae ponds will be able to improve water quality for wastewater reuse and reclamation if future wastewater supplies become availableo Water quality 2b: the algae ponds can be adapted to appropriately use degraded wastewater (should such waters become available) for algae aquaculture, extending and creating beneficial use of Colorado River supplies o Water quality 4: algae aquaculture ponds using waters contributing to or in noncompliance with total maximum daily loads (TDMLs) established by the Colorado River Regional Quality Control Board for the Imperial Region can serve as an effective tool for reducing loads in waterso Environmental protection and enhancement 1: algae aquaculture can serve as an effective means to reduce overall loading in a water system, enabling the project to help recognize and mitigate impacts to IID drains, the New River, and the Alamo

River that could result from reduced flows as a result of development or reclaimed water useo Environmental protection and enhancement 3: by covering playa with algae ponds as an effective dust and air quality mitigation measure, the project will support efforts in the Imperial Region to create open spaces, trails, parks, and other recreational projects by helping ensure that air quality safety concerns do not limit the range or support for such recreational opportunities in the region that otherwise would have respiratory health risks for public useo Regional policy goal 5: the areas around the Salton Sea and the majority of the Imperial Valley constitute disadvantaged communities and stand to suffer disproportionally from any policy or project that reduces the surface area of the Salton Sea resulting in exposure of playa, a potential air quality and respiratory health catastrophe. The algae aquaculture project directly mitigates exposures through pond coverage.

## *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* Yes. The project is consistent with the County plans and is compatible with the various plans for Salton Sea Restoration (State of California, including the Species Conservation Habitat, Salton Sea Authority) and is compatible with water transfer mitigation requirements. The algae project is also compatible and possibly beneficial to the United States Fish and Wildlife (USFWS) Sonny Bono National Wildlife Refuge habitat management goals.

Are sponsors sought? Yes

## *Project Summary*

Due to reduced total water volume inputs into the Salton Sea coupled with extremely shallow near-shore hydrographic features (especially at the Southern end of the Sea), previously submerged lakebed lands (playa) are becoming increasingly exposed. The current estimate is that approximately 30,000 hectares of playa lands will lie exposed as the water level retreats to the -232 to -234 foot elevations below mean sea (oceanic) level. This project has been conceived and designed to address the two major consequences of reduction of water input to the Sea and resultant lake level regression: exacerbation of already critically degraded Sea water quality, and Aeolian entrainment of fine grained playa sediments which threaten and depresses the respiratory health of human populations in the Imperial Valley region. This project proposes to install on playa lands a matrix of intelligently-designed and engineered shallow algae culture ponds to mitigate these two major regional problems. While mitigating these two major problems, these same algae culture ponds will provide other valuable human and environmental services such as: production of valuable algae crops and products, capture and recycling of atmospheric and anthropogenic point sources carbon dioxide (a common greenhouse gas that has been scientifically documented as increasing in concentration over time in the atmosphere, generating negative effects on global ecosystems) and other economic, environmental, wildlife and aquatic ecosystem benefits. The project has been conceived for implementation in three distinct phases; however, this proposal and its attendant budget only cover the design, construction, operation, monitoring and study for the 5-year duration Phase I. Phases II and III (to be funded separately in subsequent years) rely on the successes achieved in Phase I. The 30-acre Phase I ponds would be designed and operated to demonstrate the myriad benefits and varied operational modes of engineered algal aquaculture systems using a variety of local water sources to best match water quality, air quality and product production goals. Potential water sources include a combination of Salton Sea, Imperial Irrigation District irrigation water, agricultural drainage waters, Alamo River water, New River water, anaerobic digester effluent, treated municipal sewage effluent, and possibly in the longer-term saline groundwater. Algae biomass produced would be continually and incrementally harvested. Harvesting the algae biomass will result in net removal of nutrients and other particulates that would otherwise have flowed into the Salton Sea. Processing the nutrient-rich algae biomass would generate a variety of possible products, such as bulk organic fertilizers (including Se-rich fertilizer), bulk animal feeds, and renewable energy derived from anaerobic digestion of harvested algal biomass, and liquid transportation fuels derived from chemical extraction and processing of algal cellular oils. Selection of product mix will be evaluated based upon product demand, economic feasibility, regional economic development goals, regional renewable fuel and energy goals, and project water sources and qualities. Sales of algae products would help offset operational

costs of the project. Phase II (under separate funding) would use data gathered from Phase I to refine designs and operational protocols for constructing hundreds of acres of ponds on IID-owned or other playa lands. It is envisioned that beginning in Phase II and continuing into future expansion Phases III and beyond, suitable IID playa lands would be leased under exceptionally favorable terms to Imperial Valley grower-operators desiring to enter the algae products agriculture business. If Phases I and II prove successful, project sponsor UCSD-SIO and principal partner, IID, would lead the region into Phase III and beyond, which envisions construction and operation of 25,000-30,000 acres of algae ponds on playa lands. Such acreage is projected to produce approximately half-a-million tons of algae per year, with an attendant commercial value projected to be in the hundreds of millions of dollars per year. Algae pond productivity and operational efficiency (as has been the case for conventional land-based crop agriculture) is expected to steadily increase over time primarily due to the immense level of national investment in algal biotechnology and algal aquaculture currently being pursued by both government and private sector algae researchers and commercial systems developers. It is on these bases that this pilot demonstration project is proposed for funding and projected to be successful for the major goals, objectives and ecosystems services described.

## *Project Purpose and Need*

The project serves three important purposes: playa mitigation, Salton Sea water quality mitigation, and algae aquaculture economic development. _x000D_o The exposed playa lands present a potentially serious series of problems for (1) the continued integrity and functionality of the vast Salton Sea National Wildlife Refuge, (2) the ability of close-surrounding agricultural lands to supply the nation's earliest crop of seasonally-important and highly-valuable vegetables, fruits and forage through the microclimates large water bodies create, (3) the respiratory health (and, hence, overall health and longevity) of the regional human population (due to expected increased frequency and severity of wind-entrained fine-grain sediments entering populated regions of the Imperial and Coachella Valleys, and potentially nearby human populations in Arizona, Mexico and other adjoining regions), (4) quality of life standards for the local population (due to health hazards), and (5) ability of the Imperial Valley to attract and build up a tourism economy on the Salton Sea through water activities, camping, bird watching, hiking and fishing._x000D_o The project, through removing excess nutrient and other loads from Salton Sea waters and inflows, will, overtime and if scaled to Phase III, lower overall Salton Sea nutrient concentrations. Excessive nutrient concentrations in the Salton Sea, especially N and P, contribute to algae blooms in the lake with associated wildlife die-offs, harming the environment, conservation efforts and regional tourism in Riverside and Imperial Counties._x000D_o Algae aquaculture has the potential to provide, if scaled up and given the appropriate resources through this and subsequent projects, (1) a sustainable, domestic and renewable liquid transportation fuel with a lower carbon footprint than common sources, (2) sustainable, domestic and renewable gas through a digester process with a lower carbon footprint than common gas sources, (3) high protein animal feed able to replace, at least partially, unsustainable ocean fish meal, (4) high value and nutritional human foods, including a purely vegetable source of healthful polyunsaturated fatty acids, and (5) organic fertilizer. If allowed to develop, scale and flourish in Imperial Valley, algae biomass has the potential to foster economic development throughout the region, help meet regional, state and national renewable energy and fuel goals, and provide regional growers with a productive crop that has a higher value in revenue per unit water and land than conventional crops. Furthermore, the success of algae aquaculture on playa lands would not limit future algae development to the playa, but rather serve as an staging ground, as algae aquaculture advances, for algae initiatives throughout the region.

## *Additional Information*

• The ponds in Phases II and III could have the final stage algae ponds integrated with salt accumulation ponds currently being explored for Salton Sea salt reduction. The salt accumulated in the ponds would be hauled offsite and deposited in land-fill areas close to the Sea. Phase I includes no budget or research directed towards Salton Sea salinity reduction. • Please note that we are actively seeking additional local funding (cost match) in addition to what is listed in the funding portion of this project form.

# Imperial IRWMP

## *Project Benefits*

ID 46 **Title** *Large-Scale Microalgal Cultivation on Recently-Exposed Playa Lands for Improving Salton Sea Water Quality and Regional Air Quality*

**Water Supply Benefits** No

*Explanation:* However, if this technology proves successful here and then is allowed for adaptation to conventional agricultural lands, reuse of agricultural runoff, drainage waters, wastewater, and saline water sources would free up freshwater supply traditionally allocated for the land under cultivation; for example, for every 1 acre of land that has traditionally grown alfalfa, approximately 6 ac-ft of IID freshwater per year will be saved from use on that land in favor of using alternative and degraded water sources.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* The project will use runoff, drainage, wastewater, and saline water instead of IID freshwater; quantity of acre-feet offset will depend on final project location, design, and what freshwater-using crop the algae systems replace when scaled on conventional agricultural lands. Thus, the demand management occurs not on this R&D pilot playa project, but rather on adaptation of project technology to conventional agricultural lands.

**Ecosystem Restoration/Management I** Yes

*Explanation:* The algae ponds will reduce nutrient and other contaminant loading in waters discharging into the local riparian systems, drainage canals, and Salton Sea, enhancing and better managing the local ecosystems.

**Public Access Benefits:** Yes

*Explanation:* The algae ponds will reduce nutrient loading in waters discharging into the Salton Sea, enhancing and better managing the recreation areas in and near the lake. The project also supports the nearby USFWS Sonny Bono National Wildlife Refuge's mission of providing public access to outdoor recreational opportunities. In addition, the project's air quality benefits will enable use of existing and creation of future regional recreational opportunities as playa land exposures increase through mitigating the serious air hazards playa exposure causes.

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The harvested algae biomass can be used to produce biogas for electricity and biofuel for vehicles or to run generators. Algae for biogas for electricity are a renewable energy source that can help meet renewable energy mandates. Algae produced for fertilizer can save on energy use for fertilizer production plants; however, these benefits will probably be realized out of the region, where they are produced.

**Economic Development Benefits** Yes

*Explanation:* If this project succeeds in leading the way for the growth of algae aquaculture in IV, algae systems will provide a high-value crop for the agricultural industry and a high-yielding biofuel and renewable energy source for IV's growing "green" economy. The collective impact of such algae systems could turn IV into a hub for biofuel and biotechnology while sustaining multiple agriculture, research and "green" employment and educational opportunities.

**Other Benefits:**

*Explanation:* If the final demonstration proves successful and this leads to algae systems replacing conventional agriculture field crops, the adoption of algae systems in Imperial Valley offers a high-value crop for those in local agriculture, a high-protein animal feed to support local operations, biofuel to meet California's Low Carbon Fuel Standard, and biogas to contribute to IV's renewable energy portfolio. In addition, such a transformation will turn IV into a hub for algal biotechnology development, convert unproductive high-clay soils into productive agricultural lands and act as a sink for dangerous dust from exposed Salton Sea playa.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 46 **Title** *Large-Scale Microalgal Cultivation on Recently-Exposed Playa Lands for Improving Salton Sea Water Quality and Regional Air Quality*

***Project Schedule Information***

**Status:** Project Planning and Feasibility Study

**Commencement:** < 1 Year

**Completion:** 3 - 6 Years

***Project Funding Information***

**Funding Needs:** Currently, project is not funded. IID will offer services equal to approximately $350,000 for project costs. All other project costs are currently in need of funding.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $5,620,000 |
| **Total of planned local funding (cost match):** | $350,000 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $5,270,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *46* **Title** *Large-Scale Microalgal Cultivation on Recently-Exposed Playa Lands for Improving Salton Sea Water Quality and Regional Air Quality*

Are there project technical reports and documentation? No

*Explanation* However, the SIO academic consortium has multiple reports and system designs on algae production systems and their benefits, but none written specifically for this project. Many of the system designs are adaptable to the Imperial Region and the scales of the project. The SIO lab leading the project is a photobiology laboratory and has access to multiple engineering, productivity and life cycle analyses studies on algal culturing systems and their associated benefits.

Is environmental documentation for the project complete? Yes

*Explanation* The project is considered a pilot project for air quality mitigation and as such is covered under the existing QSA water transfer EIR/EIS. The water transfer project includes a Habitat Conservation Plan (HCP) and the algae project will include the mitigation measures outlined in that plan. The project might require a U.S. Army Corps of Engineers Section 404 permit (Clean Water Act) and a related 401 permit (State of California Regional Water Board), but would likely qualify under the existing Nationwide Permit program.

Does the project have a plan and schedule to complete the environmental review? Yes

*Explanation* A compliance review of the existing CEQA/NEPA and existing HCP documentation has been completed. The site selection process will include the implementation of the various criteria in the existing HCP and related permits. Section 404/401 compliance will be

Does the project have necessary permits and regulatory approval? Yes

*Explanation* Yes, with the exception of a possible Section 404/401 permit.

Is there a plan and schedule to complete permitting process? Yes

*Explanation* Yes, CEQA/NEPA is completed. The algae project will adhere to the already established mitigation measures included in the existing HCP and related permits. It is anticipated that the Section 404/401 process, if required, will be approximately six months.

# State RMS and Preferences

*Large-Scale Microalgal Cultivation on Recently-Exposed Playa Lands for Improving Salton Sea Water Quality and Regional Air Quality*

*Project ID* 46

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | Yes |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | Yes |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | Yes |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | No |
| Water Recrecation | Yes |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Interconnection projects between City of El Centro, City of Imperial and the Heber Utility District***

*Project ID* *47*

Sponsoring Agency City of El Centro

Participating Agencies City of Imperial, Heber Utility District

### *Project Contact Information*

Contact: Terry Hagen, PE Title: City Engineer / Public Works Director

Email: thagen@cityofelcentro.org Phone No: 760.337.4505

Mailing Address: 307 W. Brighton Avenue, El Centro CA 92243

### *Project Location* various locations

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | Yes | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* -Support disadvantaged and other communities in meeting drinking water standards. The City of El Centro and Heber Utility District is an economic disadvantaged community, as well as the region. The project would support system reliability, public safety,

### *Other Project Information*

Is the Project Consistent with existing plans? Not Sure

*Explanation*

Are sponsors sought? Yes

### *Project Summary*

The project proposes interconnecting potable water resources between adjacent city's at various locations. The City of El Centro would interconnect with the City of Imperial along La Brucherie Avenue between Cruickshank and Wall Rd. Further connection points are along 8th Street (Clark Rd) between Cruickshank and Aten Rd.Interconnection between the City of El Centro and Heber Utility District would occur between 3rd Street and McCabe Cove. Further connection points begining at the Intersection of Clark Rd and McCabe to the nearest connection with the Heber Utility District would also be considered.All connections would require water valves and water meters to control and measure distribution between adjacent agencies.

### *Project Purpose and Need*

Currently the water treatment plants at these three locations provide water treatment to there own jurisdictions without connection points between districts. The interconnection would permit an adjacent agency to be provided with water should the water treatment plant shut down and storage water be depleted, thus mitigating risks and promoting public safety. The interconnection services would occur at nearest connection points for economy as phase I with additional phases creating additional connection points for

further mitigation. The project would provide reliability, public safety, promote mutual aid, system redundancy and drought response.

*Additional Information*

# Imperial IRWMP

## *Project Benefits*

ID 47 **Title** *Interconnection projects between City of El Centro, City of Imperial and the Heber Utility District*

| | |
|---|---|
| **Water Supply Benefits** | Yes |

*Explanation:* Will provide water supply to agencies in need by tapping into adjacent jurisdictions water supply.

| | |
|---|---|
| **Flood Protection/Stormwater Management Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Demand Management Benefits** | Yes |

*Explanation:* Will provide water supply to agencies in need by tapping into adjacent jurisdictions water supply.

| | |
|---|---|
| **Ecosystem Restoration/Management E** | No |

*Explanation:*

| | |
|---|---|
| **Public Access Benefits:** | No |

*Explanation:*

| | |
|---|---|
| **Power Cost Savings or Production Benefits** | No |

*Explanation:*

| | |
|---|---|
| **Economic Development Benefits** | Yes |

*Explanation:* Project provides increase system reliability promoting additional growth in the region.

**Other Benefits:**

*Explanation:* Public health and public safety by stable water supply.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 47 **Title** *Interconnection projects between City of El Centro, City of Imperial and the Heber Utility District*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** 3 - 6 Years

**Completion:**

***Project Funding Information***

**Funding Needs:** The project would be split into phases. Interconnection with Heber Utility District is short and can be accomplished with 120,000. The Interconnection along La Brucherie would cost about $500,000, while a future phase for interconnection along 8th street would be $780,000. The total to construct the three connections is about $1.4 million.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $1,400,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $1,400,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *47* **Title** *Interconnection projects between City of El Centro, City of Imperial and the Heber Utility District*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | |
| Is environmental documentation for the project complete? | No |
| *Explanation* | |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | |

# Imperial IRWMP

## *State RMS and Preferences*

*Interconnection projects between City of El Centro, City of Imperial and the Heber Utility District*

*Project ID* 47

### *DWR Regional Management Strategies*

#### *Increase Water Supply*

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | Yes |
| Small Local Storage | No |

#### *Improve Water Quality*

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | No |
| Salinity Management | No |

#### *Resource Stewardship*

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

#### *Reduce Water Demand*

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | Yes |
| Industrial Proces Water Use Efficiency | No |

#### *Flood Management*

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

### *State Program Preferences*

| | |
|---|---|
| No | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

### *Statewide Priorities Addressed*

| | |
|---|---|
| Yes | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| No | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| No | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

***Integrated Microalgae Cultivation Process for Improving Water Quality in Imperial Valley Drainage Canals***

*Project ID* 48

Sponsoring Agency: Scripps Institution of Oceanography (SIO), University of California San Diego (UCSD)

Participating Agencies: SIO-led academic consortium will work on the project to advise as needed with potential academic collaborators including Cal Poly San Luis Obispo and academic laboratory teams affiliated with the San Diego Center for Algae Biotechnology; the SIO-led team

### *Project Contact Information*


Contact: Dominick Mendola, Ph.D. Title: Senior Engineer

Email: dominick.mendola@gmail.com Phone No: (858) 534-8947

Mailing Address: Scripps Institution of Oceanography, University of California, San Diego, 9500 Gilman Drive, Mail Code 0218, La Jolla, CA 92093-0218


### *Project Location*

Imperial Valley low productivity agricultural lands with high clay soil content with exact location to be determined based on ability to find proper agricultural lands, partner farm owners, ability to not interfere with endangered species habitat, and acc

### *Project Goals and Type*

Goals: Multiple

Type: Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | Yes |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | Yes | Other | improved economics for agriculture operators per unit of water irrigated |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* o Water Supply 5: project integrates resources management strategies that diversify the regional water supply portfolio through matching water quality to use for degraded water supplies (potential drainage and other degraded waters that stretch water supplies for use on agricultural lands) with coordinated land use and water management policies. Discharged water quality from agricultural lands that adapt this technology will improve due to the high nutrient uptake of algae aquaculture. o Water quality 4: algae aquaculture ponds using waters contributing to noncompliance with total maximum daily loads (TDMLs) established by the Colorado River Regional Quality Control Board for the Imperial Region can serve as an effective tool for reducing loads in waters throughout the agricultural areas where algae aquaculture takes place, removing water quality stressors throughout the agricultural drainage area o Environmental protection and enhancement 1: algae aquaculture can serve as an effective means to reduce overall loading in a water system, enabling the project to help recognize and mitigate impacts to IID drains, the New River, and the Alamo River that could result from reduced flows as a result of development or reclaimed water useo Regional policy goal 5: the areas around the Salton Sea and the majority of the Imperial Valley constitute disadvantaged communities and stand to suffer disproportionally from any policy or project that reduces the quality of Salton Sea ecology; current high nutrient inflows into the Salton Sea enable algae blooms to disrupt the local ecosystem, causing massive fish and

bird die-offs; upstream algae aquaculture that reduces overall nutrient loading to the Salton Sea will help reduce the intensity of future Salton Sea algae blooms.

## *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* As algae are agricultural crops and would be cultivated on existing and permitted agricultural lands using waters originally allocated to agriculture and thus, in terms of planning, would likely fall under agricultural uses in such documents. The project, in addition, is compatible with the various plans for Salton Sea Restoration (State of California, including the Species Conservation Habitat, Salton Sea Authority) and is compatible with water transfer mitigation requirements. The algae project is also compatible and possibly beneficial to the United States Fish and Wildlife (USFWS) Sonny Bono National Wildlife Refuge habitat management goals. Careful planning and location selection will ensure that interception of drainage waters is done to not negatively impact drainage species habitat.

Are sponsors sought? Yes

## *Project Summary*

This project intends to demonstrate an integrated microalgae cultivation process for significantly improving the quality of agriculture drainage waters in the Imperial Valley. Using raceway-type, or “high-rate” algae culture ponds, the system would remove dissolved nutrients—primarily nitrogen, phosphorus, potassium, and other dissolved contaminants from irrigation drainage waters. The algae would be additionally fertilized, as necessary, with loads of liquid effluent trucked-in from a planned biogas facility that will make renewable natural gas from anaerobic digestion of animal manures and other locally-available feedstocks. The nutrient-rich digester effluent would fertilize approximately 10 acres of algae ponds to recover dissolved nutrients while producing significant quantities of algal biomass. The harvested algae would be digested to produce additional biogas thereby reducing greenhouse gas emissions for the region and providing for renewable power generation. Alternatively, a portion of the algae could be processed to produce an animal feed supplement rich in protein and “healthy-fats” or a liquid transportation biofuel. Commercial-scale implementation (i.e., >250 acres) of this proposed algae cultivation system based on irrigation water nutrients would provide significant environmental benefits for Imperial Valley’s rivers and the Salton Sea by annually removing large quantities of dissolved nutrients. Large-scale implementation of algae cultivation systems would ultimately contribute to improved health of the valley’s populations through provision of a healthier Salton Sea, riparian ecosystems and wildlife sanctuaries. In addition, the SIO team intends this project to pave the way in research and development to implement this technology where desired throughout the valley, enabling a better economic use of water for valley water users and resulting in cleaner outflows from agriculture.

## *Project Purpose and Need*

The project serves two important purposes: Salton Sea water quality mitigation and algae aquaculture development. _x000D_o The project, through removing excess nutrient and other loads from agricultural waters ultimately fated for Salton Sea inflow, will, overtime and if scaled up through adoption by conventional growers, lower overall nutrient concentration inflows to the Salton Sea. Excessive nutrient concentrations in the Salton Sea, especially N and P, contribute to algae blooms in the lake with associated wildlife die-offs, harming the environment, conservation efforts and regional tourism in Riverside and Imperial Counties._x000D_o Algae aquaculture has the potential to provide, if scaled up and given the appropriate resources through this and other projects, (1) a sustainable, domestic and renewable liquid transportation fuel with a lower carbon footprint than common sources, (2) sustainable, domestic and renewable gas through a digester process with a lower carbon footprint than common gas sources, (3) a high protein animal feed able to replace unsustainable fish meal, (4) a high value and nutritional human food source, and (5) an organic fertilizer. If allowed to develop, scale and flourish in Imperial Valley, algae biomass has the potential to foster economic development throughout the region, help meet regional, state and national renewable energy and fuel goals, and provide regional growers with a productive crop that has a higher value in revenue per unit water and land than conventional crops.

*Additional Information*

Please note that we are actively seeking additional local funding (cost match).

# *Project Benefits*

ID 48 **Title** *Integrated Microalgae Cultivation Process for Improving Water Quality in Imperial Valley Drainage Canals*

**Water Supply Benefits** Yes

*Explanation:* However, yield benefits would depend on which water uses the algae aquaculture replaces and what water sources the algae aquaculture offsets through reuse of waters or use of degraded water sources.

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** Yes

*Explanation:* The project will use drainage waters, possibly in multiple pond cycles as needed to remove excess nutrients, as opposed to continuous inflows of IID freshwater; quantity of acre-feet offset will depend on final project location, design, and what freshwater-using crop the algae systems replace when scaled on conventional agricultural lands. In addition, algae pond discharge waters, instead of discharging to the drains, could be reused as freshwater for conventional crops depending on infrastructure, drainage habitat impacts and crop water quality needs.

**Ecosystem Restoration/Management I** Yes

*Explanation:* The algae ponds will reduce nutrient and other contaminant loading in waters discharging into the local riparian systems, drainage canals, and Salton Sea, enhancing and better managing the local ecosystems.

**Public Access Benefits:** Yes

*Explanation:* The algae ponds will reduce nutrient loading in waters discharging into the Salton Sea, enhancing and better managing the recreation areas in and near the lake. In addition, the project's ponds, if the project is successful and scaled up, will have air quality benefits by acting as a dust sink, helping to mitigate air quality health concerns affecting local recreation and public access area use.

**Power Cost Savings or Production Benefits** Yes

*Explanation:* The harvested algae biomass can be used to produce biogas for electricity and biofuel for vehicles or to run generators. Algae for biogas for electricity are a renewable energy source that can help meet renewable energy mandates. Algae produced for fertilizer can save on energy use for fertilizer production plants; however, these benefits will probably be realized out of the region, where they are produced.

**Economic Development Benefits** Yes

*Explanation:* If this project succeeds in leading the way for the growth of algae aquaculture in IV, algae systems will provide a high-value crop for the agricultural industry and a high-yielding biofuel and renewable energy source for IV's growing "green" economy. The collective impact of such algae systems could turn IV into a hub for biofuel and biotechnology while sustaining multiple agriculture, research and "green" employment and educational opportunities.

**Other Benefits:**

*Explanation:* If the final demonstration proves successful and this leads to algae systems replacing conventional agriculture field crops, the adoption of algae systems in Imperial Valley

offer a high-value crop for those in local agriculture, a high-protein animal feed to support local operations, biofuel to meet California's Low Carbon Fuel Standard, and biogas to contribute to IV's renewable energy portfolio. The project aims to turn IV into a hub for algal biotechnology development, convert unproductive high-clay soils into productive agricultural lands and possibly act as a sink for dangerous dust from exposed Salton Sea playa.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 48 **Title** *Integrated Microalgae Cultivation Process for Improving Water Quality in Imperial Valley Drainage Canals*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** 1 - 3 Years

**Completion:** > 6 Years

***Project Funding Information***

**Funding Needs:** Currently, project is not funded.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $3,500,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $3,500,000 |

**Seeking Prop 84 or Prop 1E Funds?** No

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** No

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *48* **Title** *Integrated Microalgae Cultivation Process for Improving Water Quality in Imperial Valley Drainage Canals*

| | |
|---|---|
| Are there project technical reports and documentation? | No |
| *Explanation* | However, the SIO academic consortium has multiple reports and system designs on algae production systems and their benefits, but none written specifically for this project. Many of the system designs are adaptable to the Imperial Region and the scales of the project. The SIO lab leading the project is a photobiology laboratory and has access to multiple engineering, productivity and life cycle analyses studies on algal culturing systems and their associated benefits. |
| Is environmental documentation for the project complete? | No |
| *Explanation* | No. However, the project will likely be able to operate as a conventional agricultural operation of the partnered farmers and growers and be able to operate under their environmental requirements. |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | Please see question 32. |
| Does the project have necessary permits and regulatory approval? | No |
| *Explanation* | Please see question 32. |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | Please see question 32. |

# State RMS and Preferences

*Integrated Microalgae Cultivation Process for Improving Water Quality in Imperial Valley Drainage Canals*

*Project ID* 48

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | No |
| GW Aquifer Remediation: | No |
| Match Quality to Use | Yes |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | Yes |
| Economic Incentives | No |
| Ag Lands Stewardship | Yes |
| Ecosystem Restoration | Yes |
| Recharge Area Protection | No |
| Water Recrecation | Yes |
| Water Exchanges | Yes |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | Yes |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| Yes | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| Yes | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| Yes | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| Yes | Drought_Preparedness: |
| Yes | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| Yes | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

# Imperial IRWMP

## *General Project Information*

### ***Holtville Water Master Plan/Map Update Project***

*Project ID* *49*

Sponsoring Agency City of Holtville

Participating Agencies None at this time

### *Project Contact Information*


Contact: Justina G. Arce Title: City Planner

Email: justina@theholtgroup.net Phone No: (760) 337-3883

Mailing Address: 121 W. 5th Street, Holtville CA 92250


### *Project Location* City of Holtville (city-wide)

### *Project Goals and Type*

Goals Multiple

Type Multiple

| | | | |
|---|---|---|---|
| Water Supply | No | Environmental Protection/Enhancement | No |
| Water Quality | Yes | Flood Protection/SW Management | No |
| Regional Policy Goals | No | Other | |

Does the Project Meet Imperial IRWMP's Goals and Objectives? Yes

*Explanation* Water Quality Goal, Objective 3: Support disadvantaged and other communities in meeting drinking water standards.The project will contribute to Objective 3 of the Water Quality Goal. The City of Holtville is classified as a severely disadvantaged community with a median household income of less than 60% of the State's median household income (MHI). The current water rates constitute 1.5% of the MHI. The community is in direct need of grant subsidies and unable to support new debt to update the City's 1998 Water Master Plan.The project will update the City of Holtville's Water Master Plan and Water Distribution Map, which will include a condition assessment of the existing water distribution, pumping, and treatment facilities to properly address the water systems deficiencies and to identify and locate substandard water distribution lines throughout the community. The acquired information will facilitate proper planning and investment for public safety and for compliance with the applicable water standards. The Water Master Plan and Map are a critical resource and component for effective system planning. Up to date plans can further incorporate policy changes that may be taking place under new requirements established by the California Department of Public Health and in essence ensure safe drinking water to over 1,696 households. a. Define local and regional opportunities, evaluate economies of scale and where cost effective, develop capital facilities.The proposed project is indeed a regional project in that the proposed plans cover services for both incorporated areas of the City of Holtville and unincorporated areas of Imperial County. Specifically, the plan and maps will address the water treatment system and water distribution lines that serve over 306 connections in unincorporated areas of Imperial County. The purpose of the project is to develop a comprehensive plan for the improvement of the City's water infrastructure inclusive of evaluation of services provided to other entities in order to meet both the short-term and long-term needs of the Holtville Community and residents of Imperial County.

### *Other Project Information*

Is the Project Consistent with existing plans? Yes

*Explanation* 1. City General Plan- The proposed project is consistent with the City General Plan Land Use Element, Provisions of Public Services Goal 5, Policy 5.3: "Support, enforce, and conform with air and water quality standards." The Water Master Plan update project will establish a plan for successful treatment and conveyance of all water from the City's water distribution system to the Holtville community. 2. City of Holtville Service Area Plan- The Service Area Plan documents the need for a Water Master Plan update under section 3.0, Growth Projections and Phasing, sub-section 3.2, Phasing. "Actual development may defer, which emphasizes the need for periodic updates to plans such as the sewer and water master plans. Plan updates will incorporate the actual location and magnitude of new development, predict future growth, and re-evaluate facility and service requirements."

Are sponsors sought? No

## *Project Summary*

The project consists of updating the City of Holtville's 1998 Water Master Plan and concurrently updating the existing water distribution system map. The end product will provide the City of Holtville with a current comprehensive report of facilities location, conditions and plan for improvements of the City's raw water treatment, storage and potable water transmitting infrastructure. The final document will provide for the adequate maintenance and repair for both the short-term and long-term needs of the Holtville Community. Periodic updates to the Water Master Plan are recommended as updates will incorporate the actual location, condition and infrastructure needs, and reevaluate facility and service requirements that may otherwise hinder economic development.The scope of services associated with this project includes: conducting a hydraulic evaluation and condition assessment of the existing water distribution, pumping, and treatment facilities; the development of a prioritized capital improvement program; updating the electronic AutoCad map of the existing water system infrastructure; and documenting the master planning elements as a component of the City's forthcoming Service Area Plan. Additional services include developing basic planning/design data and water demand forecast and developing and evaluating improvement alternatives to ensure safe drinking water standards are met and planned for.

## *Project Purpose and Need*

The purpose of this project is to update the City of Holtville's 1998 Water Master Plan and update a map of the water distribution system. The end product will provide the City of Holtville with a current comprehensive map and plan of the City's water distribution infrastructure for the adequate maintenance and repair of its water infrastructure to meet both the short-term and long-term potable water needs in compliance with the California Department of Public Health. The Water Master Plan will ensure to address potential future demand and communicate the plans for an adequate water supply and adequate storage levels for public safety. The proposed Water Master Plan will conduct a hydraulic evaluation and condition assessment of the existing water distribution, pumping, and treatment facilities, as well as assess the condition and adequacy of the water distribution lines serving the community. Deficient lines and/or lines with inadequate flows will be targeted for rehabilitation or replacement._x000D__x000D_The City of Holtville is a small rural community and in dire need of a grant subsidy. The total population of the City is 5,939 according to the 2010 US Census. Over 1,696 households are served by the City's Water Treatment and Distribution System. The City of Holtville has a relatively low income population and is classified as severely disadvantaged. Available statistics from the 2005-2009 American Community Survey provide a quick glance of the economic conditions: the median household income for Holtville residents is estimated at $36,071.00, well below the State median income of $60,392.00 (at 59.7%). An estimated 25.9% of the population is below poverty level. The community cannot afford new debt to cover the cost for preparing these plans. Current water rates constitute 1.5% of the Median Household Income._x000D__x000D_

## *Additional Information*

The Water Master Plan update project is interrelated with the UV Transmittance Water Treatment System project, as they will both assist in providing safe drinking water to the Holtville Community.

# Imperial IRWMP

## *Project Benefits*

ID 49 **Title** *Holtville Water Master Plan/Map Update Project*

**Water Supply Benefits** No

*Explanation:*

**Flood Protection/Stormwater Management Benefits** No

*Explanation:*

**Demand Management Benefits** No

*Explanation:*

**Ecosystem Restoration/Management F** No

*Explanation:*

**Public Access Benefits:** No

*Explanation:*

**Power Cost Savings or Production Benefits** No

*Explanation:*

**Economic Development Benefits** Yes

*Explanation:* A current water master plan enables management to assess the water capacity for demand from new development and removes any barriers to planned growth by ensuring compliance with the California Department of Public Health. The updated Water Master Plan will ensure that planned residential, commercial and/or industrial projects are adequately served.

**Other Benefits:**

*Explanation:* A current Water Master Plan will facilitate the City's search for capital grant funding. The City is a severely disadvantaged community, earning less than 60% of the Statewide median income, per the State's IRWMP guidelines. The current water rates constitute 1.5% of the households income and a grant subsidy would result in a financial benefit to the community at large. The community as a whole is in direct need of grant subsidies and unable to support any new debt. A Water Master Plan is a useful resource that documents the infrastructure needs to potential funding agencies.

# Imperial IRWMP

## *Project Status, Needs, and Readiness to Proceed*

ID 49 **Title** *Holtville Water Master Plan/Map Update Project*

***Project Schedule Information***

**Status:** Project Concept

**Commencement:** < 1 Year

**Completion:** < 1 Year

***Project Funding Information***

**Funding Needs:** The City will need funding to update the City's Water Master Plan and develop a Water Distribution System Map. The costs are estimated at $75,000. The City needs grant funding due to the community not being able to afford new debt.

**Do youhave cost estimates?** Yes

| | |
|---|---|
| **Total Estimated Cost:** | $75,000 |
| **Total of planned local funding (cost match):** | $0 |
| **Total of other non-state or federal funding:** | $0 |
| **Total project costs currently unfunded:** | $75,000 |

**Seeking Prop 84 or Prop 1E Funds?** Yes

**Local funding secured?** No

**Is there a plan/schedule to finalize project funding?** Yes

# Imperial IRWMP

## *Technical and Environmental Information*

**ID** *49* **Title** *Holtville Water Master Plan/Map Update Project*

| | |
|---|---|
| Are there project technical reports and documentation? | Yes |
| *Explanation* | 1. 1998 Water Master Plan.2. Water Distribution Map Base in AutoCadd |
| Is environmental documentation for the project complete? | Yes |
| *Explanation* | Exempt |
| Does the project have a plan and schedule to complete the environmental review? | No |
| *Explanation* | Not applicable |
| Does the project have necessary permits and regulatory approval? | Yes |
| *Explanation* | Ministerial |
| Is there a plan and schedule to complete permitting process? | No |
| *Explanation* | Not applicable |

# State RMS and Preferences

*Holtville Water Master Plan/Map Update Project*

*Project ID* 49

## DWR Regional Management Strategies

### Increase Water Supply

| | |
|---|---|
| GW Development, Banking, Storage | No |
| Desalination: | No |
| Recycled Municipal Water | No |
| Conveyance Improvement | No |
| Small Local Storage | No |

### Improve Water Quality

| | |
|---|---|
| Drinking Water Treatment | Yes |
| GW Aquifer Remediation: | No |
| Match Quality to Use | No |
| Pollution Prevention | Yes |
| Salinity Management | No |

### Resource Stewardship

| | |
|---|---|
| Land Use Management | No |
| Economic Incentives | No |
| Ag Lands Stewardship | No |
| Ecosystem Restoration | No |
| Recharge Area Protection | No |
| Water Recrecation | No |
| Water Exchanges | No |

### Reduce Water Demand

| | |
|---|---|
| Ag Water Use Efficiency | No |
| Urban Water Use Efficiency | No |
| Industrial Proces Water Use Efficiency | No |

### Flood Management

| | |
|---|---|
| Flood Risk Management | No |
| Urban Runoff Management | No |
| Multi-Purpose Flood Management | No |

## State Program Preferences

| | |
|---|---|
| Yes | Include regional projects or programs (CWC §10544) |
| No | Effectively integrate water management programs and projects within the Imperial Region and Colorado River Hydrologic Region |
| No | Effectively resolve significant water-related conflicts within or between regions |
| Yes | Address critical water supply or water quality needs of disadvantaged communities within the region |
| No | Support the effective integration of water management with land use planning |
| No | For eligible storm water and flood management funding, projects which provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge |

## Statewide Priorities Addressed

| | |
|---|---|
| No | Drought_Preparedness: |
| No | Use and Reuse Water More Efficiently |
| Yes | Climate Change Response Action, including support adaptation to climate change, reduce greenhouse gas emissions, reduce energy consumption, use clean energy sources to move and treat water |
| Yes | Projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment |
| No | Protect Surface Water and Groundwater Quality |
| Yes | Ensure equitable distribution of benefits, increase participation, develop multi-benefit projects, and/or address the safe drinking water and wastewater needs of small and disadvantaged communities. |

IMPERIAL IRWMP

INTEGRATED REGIONAL WATER MANAGEMENT PLAN

*For additional information see the Imperial IRWMP web site:*
*http://www.imperialirwmp.org*





GEI Consultants